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Editorials

HAPPY NEW YEAR!

And the best way to have it a felicitous twelvemonth is for every doctor in Illinois to set about making it so through concerted effort that will force the laity to keep its hands off the practice of medicine; stem the tide surging towards socialization of medicine; regain an economic balance; end the menace of Universities practicing in competition with their own graduates and of all foundations and corporations and institutions practicing medicine and settle once and for all the question of part pay clinics and political jobbery in the control of the medical profession

"Self help is best help."

We modern men must learn this lesson that built the country; and take to heart the axioms with which our forefathers conquered the wilderness, and survived in spite of the aborigines.

This industrial chaos sweeping the world is no greater a burden than were those that were borne by the early settlers and the heroic Jesuit missionaries that first explored and helped to settle the fertile Mississippi Valley for the King of France. "What man has done man may do." Are we grown so chicken hearted that we shall throw up the sponge and deliver ourselves up to socialization, state medicine and the sovietization of this our native land.

What travesty to the memory of those pioneer doctors who knew none of our modern aids to therapy or surgery! What travesty to manhood generally!

Let us rather adopt that firm resolve of the World War that stemmed the invaders in an almost irresistible rush—

"THEY SHALL NOT PASS!"

The birthright of generations yet to come lies in our keeping. We dare not be false to the trust, either to posterity or to the mother

science. No one will do this work for us but ourselves. We must tend our own bivouac.

And in the doing, as in the doing of all duty, as in the daily sacrifice of every practicing physician's life, will come a reward greater to the doctors, and will accrue a finer salvation for the world of men than can be bought by all the millions and all the commissions of all the self aggregated dictators and misguided millionaire philanthropists that even a most prosperous America might breed.

Yet it must be admitted that out of all the grief and catastrophe and irrevocable woe left in the wake of the year 1932 it was not devoid of a few gifts for mankind. Nothing in all this mundane sphere is so evil as not to learn at least the lesson of terrible example. Out of the chaos and confusion of 1932 has come to the medical profession a reawakened consciousness of the duties of the members of the profession to the mother science, to themselves and to the general public, as well as to our native land, honeycombed as it is by socialistic theorists, and a self-exploiting band of lay philanthropists. But if the year 1932 proved only too bitterly the "winter of our discontent" we can at least pause and remember "If winter comes, can spring be far behind?"

And so, both for men and medicine the year 1933 holds promise of happiness, prosperity and patriotism regained.

THE MAJORITY REPORT OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE HAS BEEN HOIST BY ITS OWN PETARD.

NINETY PER CENT. OF THE LAY PRESS SIDE WITH THE PHYSICIANS IN SUPPORTING THE MINORITY REPORT

The first glimmer of light on the present sad state of medical economics would seem to be countless indications that the flagrant report of the Committee on the Costs of Medical Care stands a chance of being hoist by its own petard.

This would not be the first time in the history of men and of nations that justice to the common good had snatched brilliant victory from what had been seemingly the jaws of defeat of the most ignominious and erroneous nature.

It does not need an expert chemist to announce that the results of five years labor and a million odd dollars spent well if not wisely has produced one of those uncleanly, unseemly, unorthodox combinations known as a stench-bomb and that its creators have landed the missile fairly in their own camp. This is not the first bomb to prove a boomerang.

Even the lay press has commenced to rally to the flag of the faithful, hardworking, occasionally paid individual known as the doctor.

And from one end of the United States to another comes echo of unfavorable opinion of this thoroughly un-American report. The socialization of medicine does not set so well on the stomachs of those by whom this dose of sovietism was destined to be swallowed.

There is scornful protest at the expressed hope of Dr. Ray Lyman Wilbur that this Committee on the Costs of Medical Care might be propagated and that "a continuing organization may immediately be formed to promote experimentation and demonstrations in local communities."

Dr. Wilbur's hope frankly expressed has not so far made him or his heart sick since it is not hope deferred. (What it is doing to wiser men is a different matter.) For Dr. Wilbur already has another committee functioning.

Now, Morris Llewellyn Cooke, an organization engineer, declares that we have come to a point where if we are to survive we must accept the contributions of science and engineering. Which is very fine coming from an engineer, but what has engineering got to do with the practice of medicine?—a lot of machine chicanery, economic jobbery and socialistic tomfoolery.

For Dr. Wilbur's hope took root, grew and blossomed. There has been founded a new group to carry on propaganda for the socialization and sovietization of medicine in America. The name of this new committee is the "American Committee on Medical Costs." Assembling it is the aforementioned engineer, Morris Llewellyn Cooke; Evans Clark, an economist, not a physician, and a director of the "20th Century Fund" that pet philanthropy of E. A. Filene, who having passed his youth in a democracy that permitted him to make millions now appears to be striving with might and main to turn

this democracy into a socialistic chaos so that nobody else will ever be able to have the chance he did, and W. J. Schiefflin, a man who makes proprietary medicines as well as pharmaceuticals. What results this new committee will obtain are more obvious than problematical. Its members, though, should study the public palate and put out findings more sugar coated than those embodied in their previous effort and which have evoked a storm of criticism, indignation, revolt, condemnation, denunciation and even ridicule by the general public, the saner economists, and the medical profession. Especially is the press lay and scientific up to its ears on the question.

Some ninety per cent. of the lay press is against this report. Newspaper comment on the report of the Committee on the Costs of Medical Care is so favorable to the side of the physician and of the minority report that once more faith is justified in the lay press as a national leader and guide.

Some of this comment cannot be requoted too often. Among the citations that have come to this desk are those from the magazine *America* which states editorially under date of December 17, 1932, that:

"After a period of research lasting more than five years, Dr. Ray Lyman Wilbur's committee on the costs of medical care has made its report. The report is not an olive branch, but the opening gun in the battle. It has been denounced editorially by the *Journal of the American Medical Association*, and by leaders in medicine in every city in the country. It is only fair to say, however, that it has been supported with equal vigor by medical men, and with significant vigor, by men whose connection with medicine is indirect or non-existing.

The New York Medical Society put its finger on the central cause of the controversy when it resolved last May to oppose "political and lay control of medicine." It seems to us that political and lay control is exactly what will inevitably result if the recommendations of the majority report are accepted. These recommendations contemplate a type of State-supervised voluntary system, paid for by groups as health insurance. No doubt this system would make proper medical care available to individuals who now pay their money to "quacks," but it also presents undeniable drawbacks. Obviously, when the patient does not choose his physician, but the patient is chosen for the physician, the relations between the two, once personal, become, rather, a matter of business. "Centuries of progress in the conquest of disease gives us confidence," write the authors of the minority report, "that the individual, and not the group, should remain the unit in medical practice."

With that contention, we agree. State-supervised medicine, voluntary at the outset, will inevitably become a medical service that is State-controlled, and, third-rate. Since in this country, unfortunately, "State-controlled" means in practice, subservience to a group of grimy politicians, the peril inherent in the majority plan is too obvious to call for comment. As the New York *Herald Tribune* remarks editorially, there is no use in saying that the system recommended by the majority would never go that far, "for bureaucracies are never satisfied with small degrees of control." We have learned little from experience if we have not learned that. No greater evil could befall a profession than to be brought under political control, and we sincerely trust that the medical profession will immediately adopt measures to avert the calamity which threatens it."

And again note these other citations:

"THE WASHINGTON STAR"

SOCIALIZING MEDICAL CARE

A majority of the Committee on the Costs of Medical Care, according to a final report filed yesterday, recommends the socialization of medical service. To say that the suggestion is revoluntionary is to make but a mild statement of the fact. But it does not imply the absolute socialization of medicine. That, obviously, is impossible to contemplate.

Clear understanding of exactly what the majority of the committee desires is imperative. In summary it amounts to this: A group practice and a system of group payment would be established, with community medical centers to provide complete medical service, both preventive and therapeutic. The work would be financed by weekly or monthly fees, in the form of insurance, taxation, or both. The poor and needy would be assured medical attention at cost. The scheme, its friends declare, would "provide for the first time a scientific basis on which communities throughout the country (could) attack the perplexing problem of providing adequate medical care for all persons, at costs within their means."

Granted that conditions as they are at present do not merit the unqualified approval of the public, and granted that there is room for vast improvement, the natural question is whether or not this one problem should be separated from all others and organized and protected under State or Federal supervision. The plan suggested by the majority of the committee could not be placed in effect without Government aid. That fact cannot be evaded. It signifies a kind of "public ownership" of medical service. It is in agreement with a tenet of the philosophy of socialism. That means that there would be a danger of political interference. If it succeeded, it would do so in spite of its political connotation. The notion that Government control would end all difficulties is unscientific.

Medical care is but one of the many problems of the people. Food, rent, clothing, fuel, in the order mentioned, also concern them. If it be proper to socialize the one, it follows that it must be proper to socialize the others. The American people in 1929 spent 3,647 millions of dollars to employ physicians, nurses and dentists, to pay hospital bills and to buy drugs and

medicines of various kinds. That is a prodigious sum of money, but it is only a fourth of the total spent for food. The majority of the committee does not suppose that the people would spend less for health under their scheme than they now are spending. To do so would be illogical. Actually, an increase could be expected. Under the new plan the number of patients would be larger. Hence the cost would be greater. True, the expense would be assumed by the whole people and the direct beneficiaries of the scheme would pay only if, as and when they could. Of course, the plan is beautifully idealistic, but why not expand it to include all the other things about which the poor are worried? Why not socialize food and clothing, rent and fuel? Why not socialize education? Why not socialize the lawyers? Why not socialize the clergy? Let there be no mistake about it: If socialization of medical care is right and just, wise and useful, then, by the same logic, a general socialization of life likewise is defensible.

The report is published at a moment when the people are discouraged. It comes as a fruit of the depression. It may be right and it may be wrong. In either case, it is entitled to study. But such examination ought to be unprejudiced. There are two sides to the whole subject, and both should be considered. It should not be forgotten that the American people are the healthiest people in the world and that their ordinary state of wellbeing, culture and prosperity was achieved under what is traditionally known as the American system of civilization, not the Marxian system.

And again.

"The Boston Evening Transcript"

STATE DOCTORS

As a flight of fancy, the majority report of the Committee on the Costs of Medical Care may prove entertaining. It reads like a chapter in a book descriptive of the world conducted on a near-socialistic basis. Thus "the committee recommends that the costs of medical care be placed on a group payment basis, through the use of insurance, through the use of taxation, or through the use of both these methods." Further, there is recommendation that "the study, evaluation and coordination of medical service be considered important functions for every State and local community, that agencies be formed to exercise these functions, and that the coordination of urban with rural services receive special attention." Such recommendations sound very much like an attempt to put the Government into medicine and surgery.

There is the accompanying statement that all this "is not meant to preclude the continuance of medical service provided on an individual fee basis for those who prefer the present method." In other words, the man who is taxed for the support of governmental practice may, if he chooses, refuse to share in the services which his taxes help support, and pay for his medical care from his own pocket. But, in that order of society pictured by the majority report, it may be doubted that the number of those who desired to pay fees on top of taxes would be sufficient to support many physicians in private practice. There is good reason to believe that, were the plan proposed put into operation, the nation would start along the road which in the end would mean the assumption of practically all medical care by governments, national, state and local. That may not be an objection to the program in the eyes of some of its enthusiastic proponents. It is not likely to commend itself to the common sense of the great body of the people.

As far as group medical service is concerned, there is nothing to prevent provision for it under the present system of medical care. There are clinics for those who like them. The patient who would go from specialist to specialist under the same roof has the opportunity. Doctors may differ as to the value of group practice, but it may be and is provided for those who want it, and it is done without transforming such methods into an activity of Government.

The majority and minority reports of the committee, the opposing attitude of the American Medical Association as voiced in its journal, and the comments of doctors and others in their individual capacities, will add for the moment to interest in life. Thereafter, it is reasonably safe to predict this report, like so many others that created excitement upon their appearance, will find place in a pigeon hole, for the time is not yet, if it is ever to arrive, when more than passing notice will be given to proposals to put the Government into medicine on a scale that would tend to make medicine a Government monopoly.

"The New York Herald Tribune"

MEDICAL MASS PRODUCTION

The recommendations of Dr. Ray Lyman Wilbur's committee for the partial socialization of medicine are certain to inspire more confusion and doubt than confidence. The promise that is extended of the elimination of incompetents, exorbitant charges by specialists, "fee splitting" and the further promise of making medical attention available to others than the very rich and the very poor in return for reasonable insurance charges will not dispel the layman's natural repugnance to the idea of making something like a fireman or a policeman of the man with whom his family has its most intimate relations outside the family circle.

The question of the motives behind the Wilbur committee's report was, indeed, raised by the New York Medical Society as long ago as last May when its journal said, among other caustic things: "Political and lay control of medicine has always meant deficient service to the people, with lowered morale and unlimited malingering, enslavement of the physician, decline in the science and art of medicine, increased cost to industry or the taxpayer, or both, and lessened rewards for physicians." With the report itself there also appear two minority reports, the first with exceptionally heavy support, opposing every suggestion of "mass production." This has been given prompt and vigorous indorsement by the American Medical Association, and this has in turn elicited from Mr. Morris Llewellyn Cooke, the new chairman of the Wilbur committee, a public statement in which the spokesmen for orthodox practice are called a "bureaucracy" and denounced for "pussyfooting and compro-

mising." Doubtless there is more of this to come.

Meanwhile the Wilbur report does lay itself open to suspicion by appearing to favor community or state support for what "The Medical Association Journal" calls "medical Soviets" and by making this suggestion overlap upon that of a contract or insurance system. It takes little imagination to see how state support for a kind of medical guild might grow into a political "racket," under which a professional hierarchy would control admission to the guild, the citizen taxed for its support would have no choice of doctor or treatment and the taxpayer's redress for inefficient or perfunctory service would involve something like a Seabury inquiry. The contract system itself is not new. It is pronounced a success in some parts of the world, but has yielded in others a fine crop of unethical practices, as "minority report No. 1" points out. Divorced completely from the idea of state support, the public might concede it the right to prove itself by experiment and experience, but not otherwise.

The theory of the contract system is that when the family man voluntarily agrees to pay a doctor or group a small sum annually for treatment, he and his dependents go to the physician with symptoms instead of advanced ailments. Logically this should result in more preventive work, less serious illness, better fixed incomes for doctors and less cost per capita among all classes. So it has indeed worked out in isolated communities, here and abroad. But, as the minority report shows, no such voluntary system has gone far in Europe without becoming compulsory, while in this country it has usually bred "loss of personal relationship of patient and physician, demoralization of the professions" and numerous abuses. Such testimony does not, however, stand in the way of an experiment which the Wilbur committee and its supporters can make anywhere by getting financial support for a medical center and popular patronage, and by proving then that the system can pay its way without Sovietizing the profession.

The imposition of such a system on the public by propaganda and legislative action cannot be too strongly discountenanced. There is no use saying that the Wilbur committee's system would not go this far, for bureaucracies are never satisfied with small degrees of control over individual liberties. The time to check the growth of such ideas is at their inception, which in this case is the immediate present, and we sincerely hope that the orthodox medical bodies will succeed in doing so.

"THE NEW YORK EVENING POST"

THE WILBUR REPORT

The medical world and the world at large should be very wary about accepting the majority report of the Committee on the Costs of Medical Care of which Secretary of the interior Ray Lyman Wilbur is the chairman. It recommends, as the *Times* briefs it, "socialization of medical care for the people of the United States, based on a system of group taxes and group payments, with community medical centers to provide complete medical service, both preventive and therapeutic, in return for weekly or monthly fees, in the form of insurance, taxation, or both."

We consider this program doubtful in wisdom. It is dangerous from the standpoint of the patient. It creates malingerers. It makes self-pitying hypochondriacs out of people who are free to go to a physician at any time without extra cost.

Secondly, it is bad for the physician. The best physician has been the highly individualistic "old country doctor." The worst has been the "company doctor." Secretary Wilbur's socialization plan seeks to turn the first into the second.

More than that, we believe the plan looks like one more effort to take a vast field of individual action and turn it over to operation by "groups." It recommends the extension of all basic public health services. At a time when we are trying to analyze just how far we can afford our present "socialization" expense Secretary Wilbur comes along and claps another charge upon us.

Heaven knows that the cost of medical and especially hospital care has gone far beyond the point where it can function fairly to meet its needs! But the Wilbur report cannot solve the problems. In the main it tries to dull individual initiative and redistribute expense instead of actually cutting down costs.

"THE PHILADELPHIA RECORD"

MEDICINE—COMBINATION OF MODERN SCIENCE AND MEDIEVAL ETHICS

"In general, pride is at the bottom of all great mistakes."—Ruskin, Morals and Religion.

What's wrong with medical practice?

An eminent committee headed by Secretary of the Interior Ray Lyman Wilbur, arch-reactionary, has spent a lot of time and money trying to answer this question, and has succeeded only in out-Wickershamming the Wickershammers.

Characteristic of this topsy-turvy time, the conservatives have delivered a majority report which involves radical socialization of medicine under bureaucratic government control.

The Record, as a liberal newspaper and a sincere admirer of the great service the medical profession has rendered humanity, resents and denounces such a suggestion. Of all the professions, medicine has responded more sincerely and immediately to scientific discovery. To endanger a continuance of this progress by shackling medicine to political control is to sacrifice one of the greatest assets of our civilization.

But while the majority recommends such an obviously improper remedy, neither majority nor minority report dares to place the blame for the present problem where it belongs,—on the doctors.

Progressive as medicine has been scientifically just so retrogressive has it been ethically. Doctors have clung to an ancient code of conduct that does not belong in this material age. They have taken inordinate pride in a system of ethics which is as outmoded as it is false. That's the reason physicians find themselves in the impossible situation where the majority of them, who are serving the community ably and faithfully, do not receive a decent living in return.

It is the pretense of medical ethics that the doctor dedicates his life to service for humanity and receives

his living from whatever bounty the community cares to accord him. To attempt to apply this medieval ethical system to the modern world has resulted in many absurdities and injustices.

For instance, doctors donate their services to hospitals and hospital clinics. Most of them have no fixed rate of pay, but charge their patient in accordance with their judgment of his ability to pay. This is a relic of a medieval system when the shopkeeper charged the nobleman more than the commoner, but does not fit well into a society where the one-price system is an essential of all business ethics.

The Record is a true friend of the physician, as it has proved itself to be on many occasions by its fights against quackery and cultism. Because it is a true friend, it is its duty to point out the faults of the profession in the hope that doctors will cure themselves and avoid outside intervention.

What medicine needs more than anything else is a new ethical code as up to date and scientific as its therapeutics.

Doctors should be paid by hospitals. They should have fixed rates, which should be shown to any prospective patient. They can well combine in groups but under their own control and without Government subsidy, which means eventual political domination.

Doctors must rationalize professional pride, and accept the humble, usual system of business ethics, according to which the rest of us conduct ourselves.

* * *

If medicine will provide less expensive care for the poor and for the middle classes, if it will relax that wall of professional ethics that has grown beyond its usefulness, if it will recognize social duties as well as individual rights, it need not fear socialization.

The Record, for one, has too great a faith in the intelligence and humanity of the medical profession to think that it cannot cure itself of what are, after all, minor faults. This plea for socialization need not be taken seriously.

Advancement of medical science demands medical centers with equipment and specialists. But this does not necessitate Government subsidy and bureaucratic control.

Medicine must not be socialized.

Says the A. M. A. editorially:

Especially significant, at this time, when a serious attempt is made to socialize medical practice in this country, is an editorial published November 19, 1932 in the *London Lancet* on "Medicine and the State." After tracing the development of the English system to 1926, when "a large measure of socialization of medicine" seemed imminent, the *Lancet* points out that the British Medical Association in 1930 was ready to adopt a "widely extended system of medical insurance." But, it says, "the situation is now very different from what it was two years ago. Excessive claims on sickness benefits and the abnormal burdens falling on the unemployment insurance funds have cast doubt upon the soundness of the whole idea of social insurance, both from the economic and the moral standpoint."

Of course one never expects a theorist, especially a theorist unversed in the science and practice of his theories to learn from experience or actual experiment. So it would be useless to cite the results of sovietization in an even partial way in other countries. How would one dare expect Morris Llewellyn Cooke, organization engineer, to admit that he did not know everything about the practice of medicine from appendectomy to zoophytes?

As the A. M. A. says further: Engineering is Mr. Cooke's business! In 1910 he made a study of eight universities and assailed them for their lack of standardization in curriculums and teaching methods. Is there still any leading educator ready to follow the apostles of standardization? Again Mr. Cooke says, "group payment and group practice are essential for the development of medicine in the United States." Moreover, in support of Mr. Cooke and the majority report comes none other than Edwin R. Embree, president of the Julius Rosenwald Fund, whose views have previously been mentioned in these columns. Mr. Embree is particularly gratified because Drs. Barker, Horsley, Steiner, Roberts, Woodyatt, Bowers, et al. signed with the majority. Finally, the new committee, according to the New York *Times*, has engaged that eminent publicity expert Edward L. Bernays to promote its views.

"Now, the medical profession need not be greatly annoyed, shocked, disturbed, excited or angered by this pronouncement, nor need the physicians of our land be affrighted by Cooke's threats relative to what he is going to do to the medical profession. As THE JOURNAL suggested last week, the reactions of the press of this country to the reports of the committee seem to include mingled amazement and amusement. Bruce Catton, in a syndicated editorial for NEA Service, remarks that the real cure for the problem lies deeper than a mere reorganization of the medical profession. "The wage-earner's inability to pay for the care he needs, and the doctor's inability to get the income he deserves—aren't these a part of a larger problem whose solution depends on

a restoration of economic health to the whole community?"

Getting down to brass tacks and common sense let us examine the situation closely again.

Where is the clearheaded, fair minded individual who will not admit in all truth that:

The physicians of this country form the only group with the training, knowledge and experience necessary for the practice of medicine?

Or that the physicians have been cozened out of their birthright by the invasion into their profession of "big business" through so-called endowments, and foundations and similar mock philanthropies that crept in and ensconced themselves because the doctors were too busy to take note of this vicious crime against humanity? Self sacrificing men intent upon their daily, yes hourly tasks of caring for the afflicted, tending the sick, striving for the prevention of disease, how could the doctors be expected to suspect those very fellowmen to whom they gave their best, of such baseness as to play the wolf in sheep's clothing? But the hour is here when no longer can the profession refuse to look straight in the face the problems, the menace, the threatened destruction of the whole structure of scientific medicine by the ignorantly devised and lay inspired schemes whose only virtue is in the money that backs those extraordinary, and incredible, even Machiavellian schemes proposed by pseudo philanthropists, nonmedical economists, public accountants, sociologists and even public health officials with egotistic bees in their bonnets.

Of this last class however it is only fair to admit that some of them who have not gone completely megalomaniac begin to see that it will be a pretty good thing for the practice of medicine when it is given back into the hands of medical men.

As the A. M. A. so ably says:

"The physicians of this country are the only group with the knowledge, training and experience necessary to practice medicine. Intent on their daily and nightly task of preventing disease, healing the sick and ministering to the afflicted, they have given scant attention and but little of their time to a consideration of the way in which their work was being invaded by the octopus of big business. They have been little disturbed by the extraordinary schemes for reorganizing their methods of practice proposed by philanthropists, economists, sociologists, socialists and overambitious public health officials. Now the time has come when they can no longer overlook the problems created by this invasion. Public health officials are beginning to see the necessity of giving medicine back to the doctors."

Let those who would, without medical training, change the nature of medical practice realize that medicine is peculiarly the doctor's problem. There can be no practice of medicine without doctors. These invaders will find that there are few physicians indeed so unaware of their obligation to medicine as a profession that they are ready, even in such times as these, to sell their medical birthrights for the promoters' mess of pottage.

It is stated further:

"There is, moreover, a far greater concern than the rights of the physician to practice as his knowledge and training indicate is desirable. There is the question of Americanism versus sovietism for the American people. There is the question of the right of the American citizen to pick his own doctor and his own hospital, to pay his own bills with his own money, to be responsible to a doctor who is responsible to him. Let the big business men who would reorganize medical practice, the efficiency engineers who would make doctors the cogs of their governmental machines, give a little of their sixty horse power brains to a realization of the fact that Americans prefer to be human beings. The commissions, the committees, the five year studies and the special reports seem to be a product of the period of inflation when the world went mad over efficiency systems, organizations and standardization. Perhaps the return of rationality associated with the period of deflation will cause this report on the care of sickness to be viewed in proper perspective."

What a contrast there is between this report of this soviet minded committee and that of the Commission on Medical Education organized in 1925 by the Association of American Medical Colleges.

This report recognizes the *Need for Medical Leadership,* for individual rather than for

group responsibility and puts emphasis upon the *Quality* rather than the *Cost* of Medical care!

This report is not so far distant basically from the minority report of the committee on the Costs of Medical Care, and which was signed by Dr. Olin West, secretary of the American Medical Association; George E. Follansbee, the chairman of the Judicial Council; M. L. Harris, a former President and for many years a member of the Judicial Council, and also Drs. A. C. Christie, Kirby S. Howlett, A. C. Morgan, Robert Wilson and N. B. Van Etten, and Alphonse M. Schwitalla, Ph.D. Moreover, two representatives of American dentistry, Drs. Herbert E. Phillips and C. E. Rudolph, dissent in a separate minority report.

Laity as well as the profession is interested in what action the A. M. A. will take in June when it meets at Milwaukee about this majority report that among other things required,—

Sixty months of study by a staff of workers that ran as high as 100 members.

Of this number seventeen were doctors of philosophy.

In addition to paying their salaries, the $1,000,000 that it cost to run that committee for those sixty months produced the final report that was 221 pages long and strong and 26 volumes of data.

One of the researchers, Edgar Sydenstricker, of the Milbank Memorial Fund, in refusing to sign the report stated that in his opinion it failed to deal adequately with the fundamental economic question which the committee was formed primarily to study and to consider.

This is really almost amusing in the face of the fact that as it has been well said, nobody but the committee seems to take the committee seriously. And probably if a straw vote could be polled the country over it would be discovered that 95 per cent. of the population is better satisfied with its relations "as is" with the family physician than they are with their relations with landlords, merchants, clergymen or their offspring's educators.

Well, they should be. The physician gives his services without hesitation and his is the last bill to be paid. And though the committee on the Costs of Medical care insists that it is out to see that "the doctor gets his" with the lure of government pay for government bossed doctors (which is exactly what will happen if this socialized medicine runs rampant with a heavy tax in an already tax-ridden country) this insistance is nothing but "swamp-fire," an irresponsible will-o-the-wisp to lead the more credulous of the medical profession into a frightful quagmire.

Let it be repeated, that quality of service has always been the thing dearest to the heart of the ethical doctor. This proximity will continue despite the dangling of false ideals by apostles of the soviet.

The medical profession of the United States —the real medical men who know about medicine and not committees of butchers, coal dealers and ribbon merchants, professional philanthropists, or busybodies, —will continue as they have always done. They must fix their economic balance to survive but the scale must be their own, not that of the laity. You do not use the same tables of computation for muslin and denim that you do for wheat, or for milk or for corn liquor. Remember that the laity predominated on that majority report and of the "M.D.'s" whose signature is appended only the lesser number (and a much lesser number) are practicing physicians. Everybody likes control and economy everywhere except on his own job. This report is another evidence of that truth.

The recommendation of the minority group states: "The minority recommends that the corporate practice of medicine, financed through intermediary agencies be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained quality of medical care and is unfair exploitation of the medical profession."

Which is quite in line with some of the points made by Dr. William Allen Pusey, speaking for a committee before the joint meeting representative of the Board of Trustees of the A. M. A., and secretaries from state medical societies and editors of state medical journals. In fact these points are so pertinent in relation to the majority report of The Committee on the Costs of Medical Care that their psychological and combative accuracy is almost uncanny. Said Dr. Pusey in part:

"The good of society must be the sole aim of its public policies and the good of the patient

the first consideration in the relations between physicians and patients.

"Experience has shown that the vast majority of disease conditions afflicting man can be most satisfactorily and economically diagnosed and treated by a competent individual general practitioner.

"Medicine's chief concern must be for the individual physician; the service rendered by individual physicians in the aggregate constitutes the great bulk of medical service. The quality of service which is given depends on the competency of the individual physicians who give it.

"The medical profession asks a career of independence under conditions of free and dignified competition.

"In its ideals of independence, medicine has a right to control its own affairs. Its history of capacity to do so and altruism justifies this claim."

CHICAGO MEDICAL SOCIETY COMMENDS THE SIGNERS OF THE MINORITY REPORT OF THE COMMITTEE ON COSTS OF MEDICAL CARE

Resolved, that the Council of the Chicago Medical Society commends the signers of the minority report of the Committee of the Costs of Medical Care as expressing the opinions of the majority of the medical profession;

Be it Further Resolved, that copies of the foregoing resolution be sent to the Editor of the Journal of the American Medical Association, the Editor of the Illinois Medical Journal, and the City Press. Unanimously adopted at regular meeting, December 13, 1932.

THE COMMONWEALTH FUND DOES NOT SUBSCRIBE TO OR APPROVE OF THE PROGRAM OF THE MAJORITY REPORT OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

The commonwealth fund of New York City is among the foundations determined not to be defiled by the pitch of the majority report of the committee on the Costs of Medical Care and so comes out in a written protest against any such suspected contact and Barry C. Smith, general director of the commonwealth fund, sent this letter in that regard to the Journal of the A. M. A. which appeared under date of December 31, 1932. We reproduce the letter.

To the Editor:—In the issue of THE JOURNAL for December 3 appears an able editorial on the Committee on the Costs of Medical Care. In this editorial are references to "the eight foundations that contributed financial support" and also, later in the editorial, on page 1952, a further reference to "the great foundations" as supporting the principle of socialized medicine.

In order that members of the medical profession may clearly understand that the Commonwealth Fund is not included among the foundations mentioned, I should like to make the following statement.

1. The Commonwealth Fund, although repeatedly requested to do so, has not made any appropriation directly or indirectly to the Committee on the Costs of Medical Care.

2. The Commonwealth Fund does not subscribe to or approve of the program of the majority report looking toward the establishment of socialized medicine.

3. The Commonwealth Fund agrees fully with the attitude expressed by the minority report on the subject of public health, as stated in the second paragraph on page 152 of the minority report.

The policies of the Commonwealth Fund in its public health work are given in detail in the book Child Health and the Community, published by the Fund in October, 1931, which received lengthy and favorable comment in THE JOURNAL, Jan. 2, 1932.

I write this letter not for the purpose of criticizing any person or group of persons but solely in order that practicing members of the medical profession may have a clear understanding as to the attitude and policy of the Commonwealth Fund toward the profession and its work.

DUE NOTICE

The farm problem, as reported by a western Texas paper:

"Positively no more baptizing in my pasture. Twice in the last week my gates have been left open by Christian people, and I can't afford to chase cattle over three counties just to save a few sinners."

UNFORTUNATELY TOO MANY MEDICAL ECONOMISTS CANNOT SEE THE WOOD FOR THE TREES.

NOTE THE STEADY DESTRUCTION OF THE BACKBONE OF THE MEDICAL PROFESSION

The world of medicine is caught in the jam of being a house divided against itself.

For such edifices the axiomatic adage is that such a house shall fall.

Is the division so marked, the fissure so deep that it cannot be bridged?

The bone of contention is the individual versus the community; the practitioner as an individual or as a member of a group or unit, —a paradox resulting in part from the over individualization to a spacious degree of the practice of medicine by an intense wave of specialization and the slow but steady destruction of the very backbone of medical practice, —the general practitioner.

As a substitute for the general practitioner the socialistic misguided laity dabbling in the practice of medicine through endowments, foundations, clinics and boards and government control, offers in various disguised versions the inept, inapt, injurious, insidious black beast of state medicine. Twist it, turn it, braid it, fold it,—do anything you please with it, it is still state medicine, a socialistic product and the first step towards a socialistic state. That changes in medical administration may be demanded by the changing times does not mean that the change of administration means a shift in control, taking the practice and authority of the practice of medicine and putting it into the hands either of the government or of the lay public. Casting about for the bridge that has carried them safely so far, both public and the profession do well to seek the return of the general practitioner.

Which means of course what might be called a majority abandonment of the intensely trained "specialist."

Among thoughtful, deliberative physicians and keen lay economists, of honest perspective, trend away from the specialist and back to the "old-fashioned family doctor" gains daily in momentum.

This is not because conditions and times love the specialist the less, but the general practitioner more. He stands out as a lifeline to craft nearing the reefs of state medicine.

Attempts to effect return of the general practitioner signalize the first movement towards the renaissance of economic balance between the medical profession and the people whom the profession serves, as well as rout of the radicals.

Like signs of spring in April, following "the winter of our discontent," from seaboard to seaboard, from clinic to college, crop up unmistakable evidences of the popular awakening for general scientific diagnosis and general care as a precedent to specific analysis and particular treatment. It is the warning cry of those humanities without which the limbs of the medical profession will stiffen as with rigor mortis.

Further this movement is a bellringer for positive efficiency.

It is dangerous to take specific treatment for an individualized ill until there is a certitude that this individual ill is really a cause and not a contributing factor. The specialist, skilled though he may be and usually is, has not at his hand those forces of insight to command the entire field of the patient and his plane, such as comes to the general practitioner who is familiar as to detailed personal history and family background. All that is one of the most essential details with which a specialist works when such knowledge is transmitted to him, not by the patient, but by a fellow medical man who has the physician's point of view and skilled perspective.

Within the past month this point has been repeatedly driven home though in a left handed manner, before numerous bodies of organized medical men, standing aghast at the ever penetrating knowledge that there is something rotten in the Denmark of our economics and wondering how best to fumigate and clean up the trouble. Unfortunately too many medical economists cannot see the wood for the trees.

Before the New York Academy of Medicine within the past two months Dr. John A. Hartwell stressed the need for medical advisors possessing at least a few of those attributes by which the old-fashioned family doctor played a monumental part in building up our civilization.

Yet in another recent speech, Dr. Charles Gordon Heyd of the New York County Medical Society made no bones of the fact that it

is his opinion that the time is not far distant when the county medical society must decide whether as an organization it shall enter into what may be termed the business of medicine.

If county societies decide that it is necessary to take this diverted path, not until this route has proven itself far from immune to the weaknesses of standardization and at least part failure in human relationship through the dehumanization of the methods of big business that will engulf the profession, will there be any concerted return of that much needed unit, the general practitioner. The public will suffer from the loss of this service, that sets forth its skill in attending to the manifold minor ills of the families that are cared for by general practitioners, and the judgment that directs them where to go in order to get the expert attention of specialists when That is Indicated. The public will suffer, too, from loss of that personal relationship between patient and physician and through the substitution of the "business methods" that make a sick man a "case" rather than a "patient."

Wiser heads in the profession hesitate ruefully against the discard of those humanities that have proven almost as valuable in practice as drugs and surgery. True these very humanities compose a large part of the economic drain upon the doctor, that leakage making it imperative that the medical profession shall adopt some means that will enable it to eat, to clothe and to shelter itself. As it is now, such is the economic pressure against doctors that the great bulk of the profession is reduced to polite and clandestine beggary.

It would seem some compromise might be made. The principles that built up the great modern structure of medicine might be invoked for aid, in the process of selective change and indicated innovation. The old-fashioned doctor, functioning as those men did, the man who lived up to the meaning of "the mother profession" can prove as useful to medicine right now as ever the sheltering arms of a mother to a lost and misguided prodigal son.

A Russian revolutionist was being led out to be executed one rainy morning.

"What brutes you are," he cried, "marching me out in the rain like this."

"How about us?" they replied, "We have to march back."—*N. U. Purple Parrott.*

SOCIAL INSURANCE*

CONCLUSION

The purpose of this series of articles on Social Insurance has been to arouse the rank and file of the medical and dental professions and, through them if possible, the general public, to an impending danger; and to dispel a number of quite generally held false opinions.

The first of these is the very commonly held belief that the moment a professional man assumes a title and a government position he knows more and becomes more efficient than he ever was before, while the contrary is more often the case because of the enervating effect of red tape and paper work.

The second common error is that by some magic Compulsory Health Insurance is going to escape the favoritism, nepotism, graft and in fact all of the evils of politics. This is a delusion, with which reformers and the intelligentsia in general are commonly afflicted. The practical man of affairs and particularly the seasoned politician does not fall into this error. Some time ago during a heart to heart conference a practical politician said what he really felt and knew to be true. He said in substance that we must remember that "We have government by politics, and you and I or all of us with a hundred thousand others cannot change this situation. I do not care whether you remove the control from the city to the state or to the federal government, it will still be controlled by politics."

The third common error again held particularly by the reformers and intelligentsia is that statisticians and economists can solve this problem unaided. Desirable, valuable and even necessary to a complete understanding of the problem as a study by competent economists is, there is one very important fact which many who have made a study of the problem do not seem to be able to realize—namely, that in a matter where personal relation is such an important element as in the practice of medicine and dentistry the ordinary formulae employed by economists do not and cannot apply. Personal relations cannot be measured by any mathematical formula devised. It is too elusive a factor to be measured by monetary or any other

*Twelfth installment of Dr. Edward H. Ochsner's articles on Medical Economics.

standards and yet of all the factors it is by all odds the most important. Only the individual who has had an extensive experience in the practice of medicine or dentistry or the one who has had a long and serious illness seems to be able to evaluate properly this phase of the problem. Then again the lack of medical knowledge by economists makes it impossible for them to appraise the difference between the personal individual care of the patient by the private physician and the more or less impersonal mechanical care of the panel or Krankenkasse physician nor are they so situated as to have access to individual patients and even if they had, they lack the training to know which is giving the better treatment. From the foregoing it must be evident that this type of study and investigation has its limitations in cases where the personal element enters intimately with a social or economic problem and if too much dependence is put upon it wrong conclusions are bound to be reached or to re-instate this point a little more concisely let us say that statistics have their value and their limitations. The more personal the matters under investigation the less their value and the greater their limitations. One writer has expressed this idea very well in the following words: "There is real danger that the economist lost in the abundance of his researches finally overlooks the plain and easy road that lies directly before him."

Probably the most common error is the belief that Social Insurance will abolish poverty. To the contrary, it is at best only a palliative and like all palliatives if employed for any considerable period of time always leaves conditions worse than when first employed.

Another common error quite generally made by the more sensitive and emotional is to believe that the receiving of charity is of all things possible the most degrading. Serious as the accepting of charity is to the character of the intelligent and sensitive, there are many other things even worse and one of these is the [illegible] general practice of malingering which Compulsory Health Insurance and the Dole encourage and foster among the workers of the nation. There is this fundamental and very important difference between accepting charity and a health insurance stipend—the former is still considered somewhat of a disgrace while to get the latter, even through subterfuge is considered highly respectable and clever.

There are two questions that the Compulsory Health Insurance proponents have never answered in spite of the fact that they have offered innumerable alibi that do "not alibi" and endless explanations that do not explain. First, why if Compulsory Health Insurance improves the health of a nation as claimed by its proponents is the death rate no lower in those countries that enjoy this "great blessing" than in those countries not so blessed? And, second, why shortly after and since the introduction of Compulsory Health Insurance have the number of days lost by the workers per annum steadily increased? The answer to the first question is that it does not improve the general health of the people and the answer to the second is that among a very large percent of the working population it substitutes for THE WILL TO GET WELL AND THE WILL TO WORK, THE WILL TO STAY SICK AND THE WILL TO LOAF.

Personally I am quite satisfied that Germany and England should make their experiments in Social Insurance and Russia her experiment in State Medicine but I am happy that these experiments are being made three and four thousand miles respectively from our shores. I am firmly convinced that if we can stave off these schemes for another ten years we will be spared them because they will prove so harmful to medical practice and medical progress and so destructive to national character that we will escape their blight. Time will demonstrate that they are fundamentally wrong, a backward step in civilization.

Human progress in most lines has always been very largely the result of unhampered personal endeavor and rarely if ever the result of governmental action primarily. Will we never be able to learn from experience and must there always be recurrent periods of halt and even retrogression in human progress?

American medicine and dentistry stand today at the threshold of their greatest opportunities and beside the abyss of their greatest dangers, the former because of their marvelous advances in the recent past, the latter because they are being pestered and annoyed by a small but vociferous group of misinformed, uninformed, unwise and in a few instances self-

seeking, selfish, self-appointed lay advisers. There are troubled times for these two allied professions; the men who stand firm now will deserve the gratitude of future generations of men and women.

JUDD E. EDWARDS ENDORSED FOR CHIEF INSPECTOR OF THE DEPARTMENT OF REGISTRATION AND EDUCATION

WHEREAS, the enforcement of all laws relating to the practice of medicine in the State of Illinois is a function of the State Department of Registration and Education, and

WHEREAS, said Department has, within the past four years rendered service of inestimable value to the public and the medical profession through its systematic and thorough discharge of its duties in this respect, and

WHEREAS, through the constant and intimate contact of this Society with the Department we can state unequivocally that the high quality of service rendered is due largely to the efficient performance of his duties by Mr. Judd E. Edwards, the Chief Inspector, and

WHEREAS, there remains at this time a substantial number of medical investigations and prosecutions, the successful disposition of which will be determined to a great extent by thoroughly experienced leadership;

Be it resolved, that the Chicago Medical Society go on record as endorsing Mr. Judd E. Edwards for the post of Chief Inspector of the Department of Registration and Education as an experienced, honest and capable public official and respectfully urge upon the Governor-Elect of Illinois, and Honorable Henry Horner, that he appoint Mr. Edwards to this position and thus assure the public and the profession continued protection from the unethical practitioner, the charlatan and the quack, and

Be it further resolved, that this resolution be spread upon the minutes of this society and the officers requested to deliver a copy to the Honorable Henry Horner at the earliest possible date and copies mailed to the following persons: Mr. J. E. Edwards, Chief Inspector of the Department of Registration and Education, Dr. B. H. Sherrard, Secretary of the Illinois State Dental Society, Dr. John R. Neal, President of the Illinois State Medical Society, and to the Editors of the official publications of the American Medical Association and the Illinois State Medical Society.

REPORT OF EDUCATIONAL COMMITTEE TO COUNCIL, JANUARY 2, 1933.

October, November, December, 1932

SPEAKERS' BUREAU

120—Health programs arranged for Women's Clubs, Nurses Associations, Parent Teacher Associations, Mothers Study Clubs, High School Assemblies, Teachers Institutes, Business and Professional Women's Clubs, Kiwanis, Lions and Rotary Clubs, Household Science groups, Librarians, League of Women Voters, College Clubs, Church Societies.

Approximately 10,000 people heard these talks on Mental Health, Thrift in Health, Value of Animal Experimentation, Nutrition and Malnutrition, Relation of Health to School Work, Adolescence, Diphtheria, Cancer, Heart Disease, Patent Medicines, Health of the Child and Adult, Eye, Ear, Nose and Throat Conditions, Prevention of Blindness, Tuberculosis, Control of Communicable Diseases, Skin Disease, First Aid, Posture and the Feet, Periodic Health Examination.

Reports indicate talks were satisfactory:

"Very interesting and inspiring for a group of this kind."

"An exceptionally good talk, well handled."

"Well given and well received."

"Treated subject with a great degree of understanding and knowledge which made the talk all the more helpful and interesting."

"Wonderful speaker and left good impression."

SCIENTIFIC SERVICE

41—Physicians scheduled to present scientific papers before the following county medical societies:

Will-Grundy	Paris Hospital, Paris
DeWitt	McHenry
Rock Island	Bureau
McDonough	Schuyler
Livingston	Perry
LaSalle	Vermilion
Kankakee	Iroquois
Sherman Hospital, Elgin	Jackson

The following subjects were requested:

Endocrinology.

Diagnosis and Treatment of Cerebral Hemorrhage in the Newborn.

Prostate.

Hodgkins Disease.

Mental Diseases and Crime.

Goiter.

Thyroid and Ovarian Disturbances at Puberty and the Menopause.

Recurrent Cholecystitis Following Cholecystotomy.

Diagnosis of Brain Lesions.

Recent Advances in Knowledge of Pernicious Anemia.

The Etiology of Gastric Ulcer.

Spinal Anesthesia.

Neurology.

Premature Detachment of Normally Implanted Placenta.

Principles and Technique of Infant Feeding.
Some Points in the Diagnosis of Cardiac Disease.
Lesions of the Gastro-Intestinal Tract.
The Present Status of Eczema.
The X-Ray.
Medical Legal Medicine.
Pioneering in Financial Prophylaxis.
Cancer.
Gastro-Intestinal Diseases.
Non-Surgical Gynecology and Obstetrics.
Medical Economics.
Gall Bladder Disease.
The Resectoscope.
Otologic and Ophthalmologic Problems in General Practice.

New list of scientific subjects and speakers compiled, sent to Secretaries.

SPECIAL SERVICE TO COUNTY MEDICAL SOCIETIES

Lay educational programs sponsored by the Chicago Medical Society have been announced over the radio following the health talks given by representatives of the Illinois State Medical Society. Announcements of the programs enclosed with all mail going from office of Committee.

Postal cards sent to physicians announcing meetings of LaSalle County, Perry County, Livingston County, Franklin County, Bureau County.

65 Package libraries loaned to physicians.

Scientific medical films and popular health films secured for county medical meetings and clubs.

Notices and program material mimeographed for the Woman's Auxiliary.

Diphtheria material to two counties sponsoring immunization campaigns and special articles to counties where diphtheria was prevalent.

Periodic health examination blanks sent to physicians.

Reprints of Editorials on Report of Committee on Costs of Medical Care from A. M. A. Journal secured for DeWitt County.

Secretaries of Medical Societies offered assistance in arranging programs on "Mental Hygiene" and "The Handicapped Child."

RADIO PROGRAMS

144—Radio talks were given over stations WGN, WJJD, WAAF of Chicago.

A. H. Wolff—Toxemias of Pregnancy.
Walter R. Tobin—Safeguarding Good Health.
Joseph Welfield—Tuberculosis of the Skin.
Edward P. Gramer—Progress of Surgery.
I. M. Trace—The Human Carburetor.
Lowell S. Selling—Reducing Children's Nuisance Values.
Fred E. Ball—Chronic Rheumatism.
N. J. Heckel—Danger of Urinary Frequency at Night.
Francis L. Foran—Coughs.
Henry A. Greenebaum—Grippe.
Charles M. Jacobs—Infantile Paralysis.
John A. Larson—Medical Status of Opinions Relevant to Lie Detectors.
E. L. Compere—The Parathyroid Glands.
Joseph F. O'Malley—Deformities of the Feet.
Max Cutler—Cancer.
Elmer A. Vorisek—Cross Eye.
J. T. Gregory—Appendicitis.
A. Hershfield—The Blues.
Volney S. Cheney—The Critical Age.
Arrie Bamberger—Tularemia.
Reinhold Schlueter—My Child Won't Eat.
John F. Delph—Hoarseness.
Frank Maple—The Expectant Mother.
Frederick Balmer—Menaces to Health.
E. J. DeCosta—Bachache.
S. Litt—Holmes, Semmelweis and the Fight Against Childbed Fever.
A. W. Stillians—Questioning the Skin.
Albert G. Peters—Errors in Refraction.
Percy E. Hopkins—Hernia.
R. Robinson Duff—Great Emergencies.
F. R. Schmidt—Your Skin in Winter.
Vernon Mrazek—Acne.
S. J. Taub—Bronchial Asthma.
Marion S. Fink—Birth Marks and Moles.
H. T. Graverstock—Your Eyes.
Bernard Fantus—Fever.
C. J. McMullen—Diabetes.
G. E. DeTrana—Appendicitis.
P. L. Jeppson—The Heart in Health and Disease.
Irving Treiger—Leakage of the Heart.
R. W. Kerwin—Nasal Catarrh.
M. Z. Albro—The Machinery of Vision.
C. H. Miller—The Use and Abuse of Medicines.
G. N. Krost—Appendicitis in Children.
J. L. Baer—Child Bearing.
Edmund Jacobson—Waste of Nervous Energies.
T. G. Walsh—The Prevention of Colds.
L. N. Katz—Heart Disease as a Public Health Problem.
A. E. Diggs—Injuries to the Knee.
C. J. Drueck—Mucous Colitis.
E. L. Chainski—Your Child's Eyes.
J. R. Ballinger—A Patient and His Doctor.
Paul H. Wezeman—Early Training for Good Health.
Louis Bothman—Care of Cross Eye.
Robert S. Berghoff—Heart Disease in Youth, in Middle Life, in Old Age.
Thomas P. Foley—What About Your Blood Pressure.
Henry Schmitz—Prevention and Importance of Early Diagnosis of Cancer.
S. W. Becker—Diseases of the Skin Due to Nervous Exhaustion.

PRESS SERVICE

2,220—Releases to Illinois newspapers.
1,295—Regular press service.
81—Monthly press service.
165—Home Bureau Advisers of the State, Material on Colds.
69—Community newspapers, meetings Branch Societies of Chicago Medical Society.
8—Association of Commerce, meetings of Chicago Medical.
204—Releases about two meetings of LaSalle County.
82—Notices Southern Illinois Medical Association.
58—Notices, Tri County Medical Society.
62—Newspapers, meeting McDonough County.
71—Newspapers, meeting Livingston County.
31—Newspapers, Franklin County.
55—Newspapers, Bureau County.
32—Releases Randolph County.
7—Newspapers, La Grange, articles on diphtheria and scarlet fever.
33—Press articles written and approved:
Dieting, Fresh Air, Birthmarks, Dangers of Sinus Infections, Percussion, Scarlet Fever—Scarlatina—Scarlet Rash, Tularemia, Deformities of the Feet, Fatigue and Health, Middle Ear Abscess, The American Disease—Appendicitis, Clothing the Young Child, Fever, Diphtheria Immunization, Four Common Fallacies, When Your Child Chokes, Prevention of Colds, Mental Development During Childhood, Mental Hygiene of Adolescence, Children Do Have Appendicitis, Use and Abuse of Medicines, Growing Pains, Cancer, Waste of Nervous Energies, Prevention of Heart Disease, Your Child's Eyes, Anemia, Nervous Breakdown, Crying Babies, Pneumonia, School Lunches, A Common Tooth Trouble, Parrot Fever Warning.

CONTACTS WITH OTHER GROUPS

Conferences with Chairman of Public Health and Child Hygiene of the Illinois Federation of Women's Clubs. Assisted her county chairmen in making contacts with medical men. Furnished them with special material. Reports indicate that these contacts are developing satisfactorily.

Director of Public Health Education and the Deputy Minister of Toronto, Canada, interested in Illinois Educational program and have asked to be placed on mailing list to receive reports of this work.

Requests for information or material from Walla Walla, Washington; Norfolk, Virginia; Manitou, Colorado.

Material furnished two university students to help them in writing theses.

Chicago doctor who is preparing an exhibit on the handicapped child for the Century of Progress asked for list of Illinois handicapped children. Request not granted because some county lists had been sent to secretaries of medical societies, and file therefore incomplete.

A good many county lists still remain in office of Educational Committee. Should these be held or should they be sent to the secretaries?

Educational Committee asked to collaborate with the Chicago Retail Druggists Association in the preparation and censoring of radio talks to be given by that Association.

Adult Education Council of Chicago has asked the Committee to prepare a series of health education talks to be given over radio station KYW during the month of March, 1933. This program has been completed and all speakers secured.

Village of LaGrange, with the consent of the local physicians, has asked the Committee to furnish health columns to their newspapers.

Committee was asked to help Marcy Center of Chicago in a series of health programs for boys and young men.

Englewood Y. M. C. A. of Chicago has asked the Committee to arrange programs for public meetings sponsored in their residence.

Moline Y. M. C. A. secured speaker from Educational Committee to appear in its lyceum course.

Two representatives of Honolulu newspapers asked for report of the Special Committee to Investigate Medical Advertising.

Secretary attended meetings of the Parent-Teacher Associations, American Legion, District meeting of the Women's Clubs, Annual Health Officers Conference, Child Hygiene Advisory Committee, Health meeting of the Educational Directors, Washington, D. C., Annual meeting of the Illinois Society for Prevention of Blindness.

Respectfully submitted,
JEAN MCARTHUR,
Secretary.

CONDITION SIMULATING HUMAN SCLERODERMA IN RATS INJECTED WITH PARATHYROID HORMONE

In the course of the collection of experimental data on rats injected with parathyroid hormone, Hans Selye, Baltimore (*Journal A. M. A.*, July 9, 1932), noted that young suckling rats receiving in some cases only a single injection of 5 units of parathyroid extract intraperitoneally develop within some days a specific skin disease. This condition presents itself first as a hardening of the skin on the back, extending bilaterally from the head to the lower border of the ribs. Within two or three days the hair over these areas begins to fall out and concomitant with these phenomena the skin becomes harder and thicker. Ulceration of these symmetrically arranged affected areas takes place in some parts, and finally after healing a bare, hairless, atrophic skin results. This condition in rats possesses striking points of similarity with the human diseases known as scleroderma and sclerodactylia, in which conditions there occurs a connective tissue hypertrophy in the skin, likewise mostly in symmetrical distribution, together with degeneration of this hypertrophied connective tissue and ulceration of the affected areas. Finally healing results in the atrophic skin over these areas. The author's report offers further substantiation for the concept that hyperparathyroidism is related to scleroderma.

Correspondence

BARRY C. SMITH, New York.
General Director, the Commonwealth Fund.

WE HAVE BEEN THROWN INTO THE ARMS OF THE NEWSPAPERS, WE ACCEPT THEM AS BROTHERS

Silvis, Illinois
December 13, 1932

To the Editor:

You'll have to dig up the old files now from the cellar and the attic. In response to a request from Dr. John R. Neal that I discuss the abstract of a report of a "committee on the costs of medical care," I found myself driven farther and farther back until his discussion is going to be accompanied by two reprints about health insurance that I wrote in 1916 and 1920.

I know that you noticed that the Dentists' minority report decries "voluntary" and pleads for "compulsory" health insurance. That explains some of the differences between our educational committee and the Dental organizations in matters of policy; we heard of it in 1916 and they did not know about it until 1932. They have not yet digested it.

Really, I am more encouraged than at any moment since 1916. We profit more by the storm of editorial resentment which the majority report has brought over the nation's newspapers than I could have believed possible. You might tell Dr. Hutton when you can that I think we have been thrown into the arms of the newspapers, more intimately than could have been achieved in any other way; they accept us as brothers. That weight of public support and confidence will help us a lot in the argument which is to come. All we have to do when Mr. Cooke speaks to a publication, is to whisper "Wilbur-costs of medical care" and the editor is ours. Even our Moline paper took a pot-shot at it and that column campaigned for Sheppard Towner, for years. I've a hunch that a syndicate supplies the dope for cold editors, anyway.

Mr. Cooke will spread propaganda for another five years if Mr. Filene holds out——— as I get it. But I'd guess five years to be the limit. If there has been no violent revolution by 1937, the outfit *you have been sponsoring and playing for will be sitting on top of the world for another decade or two.* We have reached a crucial point and the public reaction to this report is the crisis. The back-to-the-farm movement will dominate the next five years while the supply of milk for foundationists and bureaucrats will be powerful small. That all makes for individualism as against mass-handling: and this report (?) comes at exactly the proper time. I am not downhearted more than the depression warrants.

WM. D. CHAPMAN, M.D.

WHAT PRICE SOCIALIZED MEDICINE?

To The Editor: "It is a condition, not a theory, which confronts us" said President Cleveland, in speaking of the Venezuelan situation. Let's call a spade—a spade in considering the other side of the picture presented by the self-constituted and Foundation-subsidized Committee on the Cost of Medical Care, and, in considering it, let us not waste time on the voluminous general report made after "twenty-six extensive studies in all aspects of the problem," but on the only thing the People got, the "Digest of the Wilbur Committee's Recommendations for Changes in Medical Practice" given to the Press (N. Y. Times Nov. 30, 1932) after its presentation to the New York Academy of Medicine the night before; the report was not, then; is not, now; and will not be available—until revamped—and then at $1.60 the copy; some "racket"!

The distinguished Committeemen are concerned with the "maldistribution of income among physicians" and speak about "net incomes" of $3800 in the medium range and $5,300 in the average range" and that, "for every Physician with a net income of more than $10,000 there were two who received less than $2,500," and that "the average General Practitioner had a net income under $4,000, while that of the Specialist exceeded $10,000" and in 1929 there were 70,000 General Practitioners and 30,000 complete specialists"—if you know what 'complete' means.

But — these "average Doctors" surveyed by this Committee must be a naughty lot; they must have played ducks and drakes with their consciences when tabulating those "net in-

comes'' on the Income Tax Returns from which the Committee probably got its data — because, you see, the little old statistician got in his fine work by dividing up ''The Nation's Medical Dollar'' and allocating, or deducing that the

Practicing Physicians get	29.8	cents
Hospitals	23.4	"
Dentists	12.2	"
Medicines	18.2	"
Public Health	3.3	"
Nurses	5.5	"
Cultists	3.4	"
All others	4.2	"

and as the Nation's total bill is $3,650,000,000., of which $700,000,000 is for drugs and medicines (that 18.2 cents supra), then the Doctors, the ''Practicing Physicians'' get 29.8 cents of all those dollars or $1,087,700,000 — but — that report says that there are 121,000 of those ''Practicing Physicians,'' so do a little dividing and you will see that the average ''gross income'' of those physicians must be about $8989., not so bad; not so bad — if true.

That report says that the ''per capita annual cost of medical care'' is about $30. — but, in 1919, the official estimate of the U.S. Bureau of Labor statistics found the cost of medical care in the District of Columbia to be $26 per capita — and — the unofficial estimate of that cost in the State of New York, 1920 (for Compulsory Health Insurance propaganda purposes) was $23.48 — and — the Julius Rosenwald Foundation, about two or three years ago (B.C. — Before the Crash) found it to be $24., per capita. An Average of all these guesses is about $25.84, take it or leave it; believe it or not.

There is one sentence in that report that prepares the informed reader for the Committee's recommendations; it is so familiar to those who, in 1919-1920 had to meet the propagandists of The American Association for Labor Legislation and their co-workers among the distinguished leaders of our Profession. Read it:—

> There is need for some plan whereby the unequal and sometimes crushing burden of medical expenses can be distributed. The prevailing methods of purchasing Medical care lead to unwise and undirected expenditures, to unequal and unpredictable financial burdens for the individual and the family, to neglect of health and of illness, to inadequate expenditures for medical care, and often to inequable remuneration of practitioners.

There are really two sentences, there, and both mean *Control* — and by whom? and how? Read the six ''basic essentials for service program'' and get that sweet appeal to the unwary:—

> 1.—The plan must safeguard the quality of medical service and preserve the essential personal relation between patient and Physician.

and get this choice gem that indicts the American people as fools and the Doctors of their choice as incompetents — the one to be cattleized and the other panelized or shunted into the discard:—(compare it with ''1'' supra)

> 5.—It should include provisions for assisting and guiding patients in the *selection* of competent practitioners and suitable facilities for medical care.

Now, get this summation of the service program in the light of the Committee's guess that the cost of medical care, now, is about $30 per capita (the CAPITALS in the quotation are mine):—

> All needed medical care of the kind customarily purchased, INDIVIDUALLY could be provided, EXCLUDING CAPITAL CHARGES, for from $20 to $40 per capita per annum which equals 40 to 80 cents per week. The estimate is based upon the actual experience of various organizations that are now providing complete, or nearly complete, service for weekly or monthly fees, or without direct charge to the beneficiary.

Why, Lord love you! 'Lodge Practice' has been doing that for a dollar a year, for ages and of course, too, the patient has been getting the same kind of care that he might expect from this glorified State or Nation-wide lodge practice suggested by the Committee.

But — get this fact firmly in your mind; the Foundations that subsidized this ''Five Year (deliberative) Plan'' have interest in just one thing,—centralized control of the Profession of Medicine as *Its* servant, *Not* the servant of the People. All the pretty language with which the report is or may be clothed means absolutely nothing *unless* there be some central power with authority to say to the Physician ''Do this and he doeth; go here and he goeth'' and if any reader of that report believes its recommendations can be consummated without the *Panelization* of the People's Doctors and the *Cattleization* of the People in precisely the way provided in the Davenport-Donahue Compulsory Health Insurance Bill, in New York State, in 1919, and similar bills in other States, all of which were

fought and beaten by the rank and file of the Profession of Medicine, supported by the People they love and serve, then that reader needs a teacher — YOU.

Unfortunately, we who know how to measure the specious language of this report, have no Foundation at hand to provide publicity for the other side of the picture, equal or equivalent to that which has been given to the Committee's report — one whole page in my favorite morning paper, for example — and — to our sorrow and shame be it said, there are too few of us who will take the trouble to analyze this report, ourselves, or to read the analysis of some one else, and there are far too many who lack the moral courage to stand up and be counted in demanding a hearing for the opponents of the majority report or the proponents of the minority report.

In all the five years of their deliberations it never occurred to this Committee to plan, or even suggest, that Hospitals survey *themselves*; list their basic obligations and complete overhead and mark off, against that, the cubic feet of space devoted to medical activities and make it 'carry the freight,' by way of fixed charges for patient-room-space and care, which would include a small margin of profit to amortize the basic obligations — and — making it possible for the hospital to know the *Cost* of making a blood count, a metabolism test, an X-ray series and the like and to add to that *Cost* a reasonable profit to go toward amortization so that it would be possible for any Family Physician to send his patient to the nearest hospital for such aids to diagnosis (or treatment, if you will) with confidence that the patient will get value received for the reasonable money paid and that the Hospital will not, directly or indirectly seek to "lift" the patient from the Family Doctor. "Horrors!" say our distinguished leaders, "This is calumny!" No — it is fact and one of the great reasons, based on the Law of self protection, why patients are sometimes deprived of the advantages of advanced Medicine. "It is unthinkable" say the exalted ones, that "a Doctor; a soldier under the white flag of mercy, should hesitate, under any circumstances, to subordinate himself to his patient's weal!" Unthinkable or not, it is a fact, just as it is a fact that "if a dog bites you once, it is the dog's fault; if he bites you twice, it is your own fault." and do not get the foolish idea that I am exploiting a personal grouch; I am not; I simply observe closely and listen sympathetically and I talk with knowledge, now, as I did and have talked since I helped my colleagues understand and defeat Compulsory Health Insurance with Maternity Aid in the hectic days of 1919-20.

That I am right, now in warning my colleagues of the viciousness of the plans embodied in that Committee's report you may judge if you will read the "Suggestions for group-payment plan" and note the "Voluntary Health Insurance" to feed "organized groups of Medical practitioners, private group clinics, hospital medical staffs, and *Community Medical Centres,* and Consumers, *Fraternal,* Educational or other reasonably cohesive groups," and "Compulsory Health Insurance," for others. How, in the name of common sense, could such 'soviets' operate and refrain from bargain-day allurements to get the business *unless* the whole was controlled by the State or the Nation, as the holder of the purse, made up by "contributions from employer, employee and the State" and distributed through the tortuous, thirsty sands of Federal or State and local political patronage, proceeding in the tiniest of rivulets, toward the Agencies of Healing who, through ignorance, indifference or neglect permitted their distinguished leaders to bind them and their glorious Profession to quantity, rather than *Quality* service to the People.

It is encouraging to see that the American Medical Association is not in sympathy with the Socialization of Medicine recommended by this self-constituted, Foundation-subsidized Committee on the Cost of Medical care and its successor, the American (?) Committee on Medical Costs.

Let me nail one particular lie in that Committee's "Digest," a particularly inexcusable lie because the Committee had a Million dollars and five years' time to learn the truth; it is the age-worn splurge of the Compulsory Health Insurance Propagandist, all dressed up in heavy type and put in a box.

Diseases take more lives than our Army lost in the war.

Human life in the United States is being wasted as recklessly, as surely, in times of peace as in times of war.

U.S. Forces killed in the World War.....	50,285
Killed by Tuberculosis, 1930	88,088
Killed by Cancer, 1930, ...	119,818
Infants' Deaths, 1930, ...	135,845
	343,751

But — If I were to go "Back to Harlem" (N.Y.) and, looking about me, say:—"There are more colored people in the United States than there are whites," those propagandists would be the very first to cry out on me, "Shame upon you! Dr. O'Reilly — be fair; you are bound by the fact that the colored people constitute only 9.7% of the People of this country; how dare you make such a declaration from observation of *Numbers* in a distinctly colored section of a City?" and they would be just as right as I am when I demand that they, too, be fair and not deceive the people of this Country. There were 4,727,988 Soldier-population in the 11 months we were actually in the war and 50,285 "Killed" was 1-6/100% and the 343,751 deaths from Tuberculosis, Cancer and Infants' diseases were only 28/100% of the population of the nation (122,-775,046) — and — among the soldier-population in the war there were 74,426 other deaths from "Natural causes, Homicide, Suicide, Accident, Drowning, Executions, and other causes," which makes the total war-death-rate 2-63/100% as against the national death rate in peace, in 1929 and 1930 of 1-19/100% so let them "laugh that comparison off."

Well, what are *You* going to do about it? Here is what I shall do: I shall write the Chief of Staff of every one of the 53 Hospitals in Brooklyn (Kings County, N.Y.), asking him to read my letter to every member of his staff; in it I shall remind them that "In days of old when Knights were bold" and honor held full sway, if a Military Corps was smirched in its honor, the stain could be removed in only one way; by the Corps *Decimating Itself*; the men would be lined-up and "count tens" and every tenth-man would step forward to be shot; that if the preservation of honor be as important as the purging of dishonor, it might be well for such groups to "count tens" and every tenth-man assume the solemn obligation to see to it that himself and the nine who preceded him in the count would attend every meeting of the County Medical Society, *Right Through the Business Sessions*, month after month until this debacle — this stampede toward Sovietized-Medicine is stopped and the public mind led through paths of reason to solve its public and private health problems by means that would be in sympathy with the ideals, traditions and institutions of this Country — not Russia. That their interest and attendance would tend to neutralize the Socialistic-communistic Left-Wing in the Society and prevent precipitate, snap judgment until it would be possible to get a copy of that suppressed or witheld report, have it analyzed, section by section, by a properly equipped Committee of our own County Medical Society and submitted to the Society for its determination by judgment and reason rather than impulse and hysteria; that snap judgment, at this time, would cast dishonor on our County Medical Society and betray the People who have a right to look to us to stand between them and danger. How about it? An informed American People never went wrong — and never will. Go to the People with the *Facts!*

JOHN J. A. O'REILLY (M.D.)
642 Union St.
Brooklyn, N. Y.

HEALTH RADIO PROGRAMS ARE APPRECIATED BY THE PUBLIC

November 30, 1932

Radio Station W J J D
Chicago, Illinois.
Gentlemen:

While I have always felt that those who entertain and instruct over the radio miss keenly the appreciation and stimulus of the applause of a public accorded in other circumstances to many who are not as deserving, I have always hesitated writing a radio station, with the same hesitancy that stays the clipping and signing of the "attached coupon" of an ad.

I am however breaking my rule in this case to express my appreciation to the Illinois Medical Society for today's talk by Doctor ———. It was excellent. I have missed this period before.

You do not know how refreshing it is to be able to listen in with a confidence that this is NOT an "M.D. Salesman" for yeast, milk, or some "cure-all."

Very sincerely—

AUXILIARY NEWS

December was a busy and successful month in the organization of new county auxiliaries, and we take great pleasure in welcoming to the Illinois State Auxiliary two units. All organized counties and members of the State Board extend greetings and good wishes to these young organizations and hope for a healthy continuous growth and enthusiasm.

Mrs. A. B. Middleton, Councilor for the Second District reports the organization of the Livingston County Auxiliary. Mrs. Solomon Jones, President-Elect and Organization Chairman visited Bloomington and aided in the consumation of organization plans for this county unit.

The officers elected are—

President—Mrs. E. G. Beatty, Pontiac.

Vice President—Mrs. O. D. Willstead, Chatsworth.

Sec'y and Treas.—Mrs. H. L. Parkhill, Pontiac.

Livingston County Auxiliary starts out with eleven charter members.

Marion County has also just completed organization of a Woman's Auxiliary to the Marion County Medical Society, and on December 2nd the following officers were elected.

President—Mrs. William N. Hamilton, Odin.

1st Vice President—Mrs. Walter L. Finn, Iuka.

2nd Vice President—Mrs. Mary Green, Salem.

Secretary—Mrs. F. A. Phillips, Centralia.

Treasurer—Mrs. H. Wilson, Centralia.

Our President, Mrs. E. W. Mueller, 1054 Loyola Ave., Chicago, Ill., met with a serious accident on November 28th. While in her home she slipped and fractured her ankle. Although she will be confined to her home for some time she is able to carry on and direct the activities of the State Auxiliary. While convalescing no doubt Mrs. Mueller would enjoy receiving interesting auxiliary news from the members and officers, for the Auxiliary is always uppermost in her thoughts.

We hope for a rapid recovery and extend regrets to Mrs. Mueller.

The November meeting of the Douglas County Auxiliary was held at the home of Dr. and Mrs. G. H. Fuller, Tuscola, and was in the form of a Potluck Dinner and Bridge. During the business meeting Mrs. Myron Boylson, Tuscola, was appointed Publicity Chairman.

St. Clair County Auxiliary continues to have enthusiastic meetings, and the December meeting was held at St. Mary's Hospital, East St. Louis, with 32 members present. A report on several articles published in "Hygeia" was presented by Mrs. J. J. Donahue.

Correction—Item in last month's Bulletin stated "North Shore Branch holding monthly meetings at various hospitals." This should have read *North Side.*

MRS. F. P. HAMMOND, *Chairman*
Press and Publicity.

"I THOUGHT IT WAS ONLY A SORE THROAT, BUT THE DOCTOR SAID . . . DIPHTHERIA"

A Mother's Confession

"I was young, and my husband's salary was very small. So, when my four-year-old son got a sore throat, I thought I would treat it myself.

"I had watched the nurses in the college infirmary 'painting' sore throats, and preparing gargles. I followed their example, and was very proud of myself.

"But my son's throat became worse instead of better. I put him to bed and kept compresses on his throat for two days. The following morning, I found him so sick that I became very frightened, and called the doctor.

"'It's diphtheria,' he said, after making his examination. 'He should have had antitoxin three days ago.'

"I don't know how I lived through those next few days. My boy seemed at the point of death, and I was responsible. The doctor was my only hope. Instead of chiding me for my stupidity, which he had every right to do, he did his best to comfort me and his interest and attention assured me that everything that could be done was being done.

"Finally the doctor was able to tell me that my boy would get well.

"My boy did get well, but I shall never forget the agony I went through because of my stupidity and neglect."

Original Articles

THE MANAGEMENT OF TABETIC OPTIC ATROPHY*

GEORGE F. SUKER, M.D., F.A.C.S., AND MAX M. JACOBSON, M.D.
CHICAGO

The management of tabetic optic atrophy necessitates a careful consideration of the pathology found in tabetic optic atrophy according to the knowledge that we possess of it at the present time. The difficulty from the start is that up till the present we have been unable to use prophylactic measures to combat this affection, which of course would certainly be ideal. It seems that a more thorough investigation and observation of the period elapsing from the time of primary inoculation to the manifestation of early central nervous lesions are indicated. In dealing with such cases that are diagnosed early, the certainty of the disease must be established by all methods of examination, so that the result is a group of cases, the course of which we are attempting to influence. The case carefully and accurately diagnosed, we proceed to a thorough investigation of the visual functions so that a control is had and continuation of such examination throughout the course with ultimate conclusions being withheld until a proper time interval has elapsed. Also we must well guard our enthusiasm in the results obtained because the course of disease while being progressive loss of vision, has remissions.

The literature is filled with articles pertaining to the treatment of tabetic optic atrophy, not because we know so much about it, but because we know so little about it, and as a natural sequence, various authors report favorable and unfavorable results. The reason for the authors' choice for a certain method in the management of tabetic optic atrophy is the result of one case which was reported by Dr. S. R. Gifford[1] in 1923 (this case was recommended to the senior author for therapy) as Gifford claims the result is most promising providing the procedure was actually responsible for the improvement or was it because a remission had occurred? Apparently a positive spinal fluid Wassermann was altered into a negative fluid and the vision was definitely improved and remained as such for two and one-half years until an accidental death terminated the picture. It is quite unfortunate that such a case could not have been followed for a much longer time and that a post mortem was not obtainable. Returning to our original statement, we must discuss the pathology of tabetic optic atrophy, for the whole question of treatment depends upon it.

We must reconstruct our conception of so-called primary tabetic optic atrophy caused by toxins produced by syphilis elsewhere in the body as was based on the examination of nerves by Cruveilhier, Virchow, Uthoff, Leber, Papow and others (these authors found simple gray degeneration of nerve fibers without any signs of inflammation). Other authors such as Moxter, von Michel and Glicksmann found the degenerative processes most marked in the retinal ganglion cells and the theory was advanced of an ascending atrophy beginning in an injury to these cells by the toxins. Most of these pathologic examinations concerned only a small number of eyes that may have undergone cadaveric changes and also these eyes represented late stages in the disease.

Keraval and Raviart[2] found evidences of degeneration in the retinal ganglion cells and also proliferative changes in the nerve and its vessels. Marie and Levi[3] examined the optic nerves of 60 tabetics and paretics, finding in the atrophied nerves evidences of previous active inflammation in nerve and visual tract. Because of the nerve and tract changes being so marked and the retinal ganglion cells so mild, they concluded that the first lesion in the nerve is the ordinary peri and endovasculitis of tertiary syphilis producing secondary optic atrophy.

Stargardt[4] was led to similar conclusions after examining the complete visual apparatus, brain and in some subjects also the cord in 21 cases of tabes and paresis and compared the changes with field defects found during life. In all of the 13 cases which had shown optic atrophy during life, evidences of active luetic inflammation were found at some point in the nerves or visual tracts. These consisted in an infiltration chiefly by plasma cells, extending into the

*Read before Section on Eye, Ear, Nose & Throat, Illinois State Medical Society, Springfield, May 18, 1932.

nerves along the pial septa and the pia surrounding the nerves and chiasma and being especially marked about the central vessels at their entrance into the nerve. In 8 early cases showing these changes in the nerve, no changes were noted in the retinal ganglion cells, which would seem to speak against the theory of retinal origin. Stargardt concludes that luetic optic atrophy is a secondary atrophy, due to changes of late syphilis such as found elsewhere in the body. We are dealing with apparently a descending atrophy starting in the region of the chiasma, descending rarely to retrobulbar part and which appears ophthalmoscopically as primary. Igersheimer[5] has isolated the spirochete in the sheath of the optic nerve and in meninges near the chiasm.

Such a view of optic atrophy as the result of active luetic neuritis or perineuritis is in line with modern views on syphilis of the central nervous system, although a combination of pathology may be present which may account for some of the variable results reported. If the above view is correct, it offers the possibility of arresting the process with preserving the vision that is present, and in some cases hopes for improvement with retention of such vision. Of course where the nerve is anatomically atrophied we cannot hope for regeneration, although nerves which are temporarily compressed may be helped to restore some of their function. The test of our therapeutic measures must naturally be made not in cases where there is complete atrophy and very little function, but in early cases where results are much easier to observe, and of course much importance must be emphasized in accurate examination of visual functions in cases of suspected neuro-syphilis or of luetic ocular muscle palsies.

As in syphilis of the central nervous system, general treatment in luetic optic atrophy, whether mercury, salvarsan ar neo-salvarsan alone, or in combination, have not had any lasting beneficial effect upon the atrophic process as such. A few authors such as Iwaschenkoff[6] and Nonne have reported moderate success by the intensive use of salvarsan, and with others as Greefe[7], Waldemann[8] reports are given of ensuing progressive blindness with intensive treatment. Hermann[9] Foster[10] Lopez[11] and Feldman[12] report favorable results in the use of bismuth. Another method of attack is the artificial production of hyperthermia by the use of malarial inoculations as practiced in general paresis. Fisher[13], Ascher and Marie, and Morretti[14] have reported on a number of favorable results after such inoculations, while others Elschnig[15], Behr[16], Bering[17], Wagner-Jauregg[18], Havel[19], Messmann[20] and Roggenbau, have seen no effect on the progress of the disease. Wurz[21] reports unfavorable results with the use of typhus. Atropine injections into orbit on basis of relief of spasm of vessels have also given some favorable results according to Abadie[22], Samkowski,[23] and Safran.[24] Friede[25] has had no favorable results with puncture of the anterior chamber. Mauksch[26] has attempted the eradication of a rhinogenic cause of tabetic optic atrophy, but has had no influence on course. Winkler[27] has used sulphur with no particular effect on course of disease. Queso[28] with the use of a colloidal preparation of mercury has had no beneficial results.

When spinal injections through methods of Swift, Ellis and others were first reported, it seemed that this might offer a better mode of attack in optic atrophy. It was soon found however that although some cases of tabes were improved, and some early ones apparently cured, higher lesions such as those of paresis and optic atrophy, did not respond so well. A few good results of spinal treatment in optic atrophy have been reported. Gennerich and Fordyce[29] each report favorable results in two cases. Schacherl[30] Somogy[31] and Zimmerman[32] report some favorable results, also.

With the knowledge that we possess of the circulation of the cerebro-spinal fluids and the pathology of tabetic atrophy, and if these are accepted, we have possibly a better understanding of the modes of approach. Weed[33] has shown that colored solutions could be forced into the sheaths of the cranial nerves only by using continued pressure for over three hours. Such a process seems impractical clinically. Schoenberg[34] not using such pressure, found that solutions seldom reached above the posterior cerebral fossa and never stained the optic nerves. Ayer[35] applying this fact, therapeutically injected salvarsanized serum intraspinally, followed by saline under pressure of 400-600 mm. of water for one hour. He reported

four cases of optic atrophy held stationary for three months.

Behr[36] drained the spinal fluid at intervals during intravenous salvarsan treatment, believing that this would increase the amount of drug reaching the nervous system from the blood stream. He reports one early case with a marked diminution in dark adaptation in which this returned to normal and remained so with good central vision for three years. Gifford reports one case stationary for three months and in three others progressive blindness ensued. Dercum has used spinal drainage extensively in America and claims good results in various types of neuro-syphilis, but Stokes and Osborne[37] after a careful comparison of results of different methods in their patients found spinal drainage to have little or no advantage over general treatment; while intraspinal treatment showed distinct advantages. The question is still an open one amongst neurologists. Marinesco[38] still claims good results, while Sicard who in 1899 was first to use mercury in spinal route, has abandoned the method believing it in some cases to be dangerous and has no advantage over general treatment. There can be no doubt as Sicard[39] first suggested and Mehrtens[40] and MacArthur have recently proved, that the effect of intraspinal treatment is not due solely to the amount of drug administered which reaches the nervous tissues, but partly to the irritant effect of both serum and drugs which increase the permeability of the meninges to drugs already present in the blood.

Goebel[41] attempted to produce a concentration of the drug in the region of the nerve by applying intermittent suction to the globe. Beriel[42] injected mercury directly around the nerve with a long needle. Lowenstein produces a general reaction by actual inoculation with malarial parasites, followed by salvarsan. None of these observers has reported a series of cases followed for sufficient length of time to determine the value of their method.

In 1916 Schoenberg succeeded in staining the cranial nerves of animals intensely by injections into the lateral ventricles. Wegeforth[43] had shown that injections into the basal cysterna have this effect and that if the aqueous is removed at the same time the dye even penetrates between the nerve bundles of the papilla and reaches the retina. Schoenberg has reported five cases of optic atrophy in which salvarsanized serum was given intra-ventricularly and favorable results were obtained in early cases.

The senior author in 1917, bearing in mind that topical application at site of pathology resulting in a local irritation, was very essential, and also that mercury was more deleterious to syphilitic invasions, proceeded to use bichloride of mercury injections into the lateral ventricle as a method of therapy. It has been clinically substantiated by numerous cases Hall,[44] Hamill, Basso and others that repeated injections can be made into subarachnoid spaces without entailing any untoward effects, provided injections are made skillfully and with good judgment. Hammond,[45] Sharpe and Hamill, neurologists, have reported some successes. Hamill used 100 mg. of neosalvarsan divided between the two lateral ventricles and points out that these large doses are well tolerated in the cranial cavity, whereas only 2-3 mg. can safely be given intraspinally. Marinesco emphasizes the same fact and uses up to 160 mg. intracranially. Sicard, LaPointe and Marie have used this method with varying success, Sicard having abandoned it in favor of general treatment. Gifford and Keegan[46] have reported several favorable results with the use of bichloride of mercury intracysternally. Air injection in subarachnoid space by Fazakas and Lowenstein[47] have given some favorable results. Evidently a marked meningeal irritation is set up by the injection which may probably be considered as a more important question in therapeutic effect than the actual spirochetal effect of the drug, since it increases the permeability of the meninges to drugs and antibodies in the blood stream and causes a local hyperemia which may improve the nutrition of the nerves.

That the intraventricular route is a radical procedure cannot be denied, but does not inevitable blindness justify heroic measures even if the procedure only results in the saving of some vision or stays the ultimate blindness much beyond the usual period for complete blindness to set in?

The technic of the ventricle injection includes a consideration of the various ap-

proaches. The lateral ventricle being composed of three horns can be approached from three distinct points. One route is through the subparietal, the other through the occipito-parietal and the third through the frontal portion of the skull. Of these the latter is the simplest and is comparatively free from any dangers and is therefore the route chosen by the senior author.

Under morphine and scopolamine narcosis, a one inch linear skin incision is made over site of trephine, which is determined as follows: Mark a point in the median line on the scalp 3-3½ inches above the nasion. This point is directly over the longitudinal sinus and near the bregma, at the junction of the sagittal and coronal sutures. Then from this point select another about 1-1½ inches to the right side. This latter point is to be the centre of the trephine area, where a button of bone ½ to ¾ inches in diameter is removed. The periosteum for a little distance beyond the trephine is sacrificed, the trephine button is not replaced, so that subsequent injections can be readily made. In trephining at this point, no vital brain structures are exposed and the longitudinal sinus cannot be punctured. A sharp pointed needle with obturator (about 6-8 cms. long) is then inserted through the dura, away from any dural vessel in the following direction: Incline to an angle of about 45° to the median perpendicular plan of the sinus and backward in an angle of approximately 10-15°. Insert the needle slowly, keeping it fixed and absolutely in the direction above stated to the extent of 4½-5½ cms. Slowly withdraw the obturator and gently incline the head some to the right. If you have entered the ventricle fluid will appear and will pulsate provided the ventricular fluid is not under increased pressure. Two or three attempts can be made if first has failed, providing needle is withdrawn each time and landmarks reconsidered. Also needle may have passed through ventricle, so that careful withdrawal of needle without stilet may be successful. If all attempts have failed, it is best to repeat it another time.

From 10-40 cc. of ventricular fluid is withreinjected into the ventricle. Do not reinject drawn and one-half of this amount with the addition of the bichloride of mercury is slowly blood stained serum with the mercury, because of the trauma already sustained. During the introduction of the needle and withdrawing of fluid, it is best to watch pulse and respiration. Withdraw the needle in the same direction as inserted, and with not too much speed and apply light pressure upon dura to aid in obliterating the point of entry. Close the wound with several well placed sutures or clips so as to secure the best possible coaptation. Apply a moderate voluminous and light dressing. Remove stitches within four or five days and have head slightly elevated and feet lowered. Always select the right side of brain for entry because on this side we have the greater number of silent areas, hence little damage can be inflicted. Keep the patient in bed for at least two days after the first injection, and thirty-six hours after subsequent injections (X-Ray charts with needle in ventricle, passed around).

The cases to be reported comprise a series of 32 cases which have been carefully and accurately confirmed as tabetic optic atrophy.

TABLE SHOWING STATISTICS ON INTRACRANIAL THERAPY

RESULT	GOOD	FAIR	STATIONARY	LT. PERCEPTION	BLIND	DEATHS
Individual number of cases	1, 2, 3, 4, 5, 7, 8, 9	6, 19	15, 16, 20	11, 21	10, 12, 13, 14	17, 18
Period of observation	1 case-8 yrs. 3 cases-7 yrs 3 cases-3 yrs. 1 case-2 yrs.	1 case-2 yrs. 1 case-4 yrs.	1 case-1 yr. 1 case-2 yrs. 1 case-4 yrs.	1 case-1 yr. 1 case-1 yr.		
Per cent	0.38	0.09	0.14	0.09	0.19	0.09
Total	8	2	3	2	4	2
Ventricle Injection	32 [11 cases (records from Cook County Hospital to be published at another date)]					
Average No. of Injections	3					
Interval of Injection	11 days					
Amount of Injection	1-50 grain of Bichloride of Mercury.					

In each instance a spinal fluid and blood Wassermann was made in addition to a Wassermann test on the first ventricular fluid obtained at time of operation. In all spinal fluids cell count and globulin tests were made. A complete physical examination was made to

substantiate the diagnosis. An accurate perimetric examination was made provided the visual acuity permitted it, and this record along with visual acuity (corrected) was taken as an index for comparison during the course of treatment. Each of these cases has had a series of four to six injections, the dose of mercury bichloride used varying from 1/100 to 1/40 grain. The interval between injections varied from ten to fourteen days. All of these cases were treated in addition with mercurial rubs and iodides, also some had salvarsan upon general principles.

CONCLUSIONS:

1. Prophylaxis is certainly desirable and ideal, but up to the present has not as yet been established. According to some statistics, tabetic optic atrophy has not been on the increase. It seems that more careful observation of the results obtained in the management of general systemic syphilis is indicated so that proper changes in management can be made in order to prevent some of the late central nervous system developments.

2. Intracranial injections of mercury bichloride have given better results than any of the other methods used. There have been several cases with definite improvement or arrest of condition with retention of useful vision for a period of several years. A negative spinal fluid Wasserman has resulted frequently.

3. The method of choice is the intraventricular injection which in a large measure is to be considered as a topical application and is a relatively safe procedure.

4. In order to accomplish the utmost benefit in the management of tabetic optic atrophy, the diagnosis must be made early; and that every syphilitic of any years standing should be critically examined with reference to tabes and paresis and that in all of these cases careful perimetric examination should be made to determine the earliest possible field infringements, then the immediate application of intracranial injections followed by systemic treatment as well.

DISCUSSION

Dr. Walter Stevenson, Quincy: I would like to ask Dr. Suker and Dr. Jacobson if they have considered the possibility of getting the same results by direct injection into the carotid. It has been reported that meningeal infection has been successfully treated that way. Also, just how do they consider the solution reached the optic nerve? Do they consider that it filters directly through the wall of the third ventricle, and thereby reaches the chiasm, or do they consider that it passes back through the aqueduct, fourth ventricle, and out through the Foramina of Magendie and Luschka thereby reaching the nerve by way of the external system.

Dr. Leo L. Mayer, Chicago: I think it is very important when a new method of treatment of these conditions is brought forth, that it should not go without some discussion. The factors of importance in a discussion of this type are so numerous that it would take all afternoon to cover them. In the first place, many cases of beginning optic atrophy due to syphilis, when treated by ordinary methods, make a certain amount of progress in the amount of optic atrophy, and then stop for some unknown reason—whether due to treatment or whether it has gone to the point of stoppage or not is a question, but they do not as a rule go on to complete blindness, and the fields will show what Dr. Suker has shown.

Another point which Dr. Stevenson has inquired about is the point where the injection is made. Anatomically and physiologically it would seem that mercury would be absorbed into the blood stream or be transferred to the spinal fluid. How it affects the optic nerve and chiasm it is difficult to say.

Dr. Charles F. Read, Chicago: I wonder if Dr. Suker has not over-emphasized the danger of removal of the ventricular fluid. Possibly his patient had an aneurysm in the wall of the ventricle. Some years ago I had four or five paretics trephined and withdrew fluid from the ventricle, 20 to 40 c.c., with a syringe on many occasions without harm. One went into an abrupt remission following the first removal of the fluid.

Did I hear correctly that all these patients showed negative Wassermanns and spinal fluid following these three or four injections? And may I inquire also if Dr. Suker has treated any cases of paresis with optic atrophy?

BIBLIOGRAPHY

1. Gifford, S. R.: Brit. Journ. of Ophth. Vol. 7, Nr. 11, pp. 506-521, 1923.
2. Keraval and Raviart: Arch. de Neurol. Vol. 14, pp. 336, 1902.
3. Marie and Leri: Rev. Neurol. Vol. 12, pp. 190, 1904.
4. Stargardt: Arch. f. Psychiat. and Neurol. Vol. 51, pp. 711.
5. Igersheimer: Deutsch. Med. Wochenschr. Nr. 26, 1931.
6. Iwaschenkoff and Nonne: Quoted by Igersheimer "Syphilis und Auge," Berlin, 1918.
7. Greefe: Berl. über d 43rd Vers. d. dtsch. ophth. Ges. Jena V, 8-10, 1922, pp. 133-139, 1932.
8. Waldermann, Ivan: Orvos Kepzes Jg. Sonderk, pp. 62-67, 1925.
9. Hermann, Rene: Ann. d. oculist. Vol. 160 Nr. 1 & 2, pp. 961-972, 1923.
10. Foster, L. J. and W. A. Smith: J. of Neurol. a. Ment. Dis. Vol. 60, Nr. 5, pp. 472-478, 1923.
11. Lopez: Arch. de. oft. hispano-americ. Vol. 27, No. 19, pp. 464-467, 1927.
12. Feldmann, A. and F. Vernke: Russk. Vestri Dermat. Vol. 7, pp. 720-731.
13. Fischer-Ascher and Marie. Med. Klinik Jg. Vol. 27, Nr. 52, pp. 1991-1993.
14. Moretti: (Abstract, Zentralblatt fur die Gesamte Ophth. und ihre Grenzengebiete, pp. 575).

15. Elschnig, A.: Klin. Monatsbl. f. Augenheilk. Vol. 75, Nov.-Dec. pp. 773, 1925
16. Behr, Carl: Munch. med. Wochenschr. Jg. Vol. 73, Nr. pp. 311-313; Nr. 9, pp. 366, 1926.
17. Bering, F.: Dtschr. med. Wochenschr. Jg. Vol. 52, Nr. 38, pp. 1611-1613, 1926.
18. Wagner-Jauregg: Zeitschr. f. Augenheilk. Vol. 61, Nr. 3, pp. 127-142, 1927.
19. Havel, Jaroslav: Caspis lekaru ceskych Jg. Vol. 67, Nr. 29, pp. 1055-1059.
20. Meesmann und Rogenbau: (Abstract Zentralblatt Fd. gesam. ophthal. Vol. 22, pp. 812-813).
21. Wurz, Richard: Casopis lekaru ceskych Jg. Vol. 67, Nr. 3, pp. 97-100, 1928.
22. Abadie, Ch.: Arch. de oft. Vol. 26, Nr. 7, pp. 361-366, 1926.
23. Samkowski, J.: Arch. oftolmologie. Vol. 3, Nr. 2, pp. 286-295, 1927.
24. Safran, G.: Dnepropter. med. Nr. 4/6, pp. 200, 1926.
25. Friede, Reinhard: Zeitschr. f. Augenheilk. Vol. 52, Nr. 1/2, pp. 99-102, 1924.
26. Mauksch, H.: Zeitschr. f. Augenheilk. Vol. 65, pp. 336-344, 1928.
27. Winkler, Ludwig: Wien. Klin. Wochenschr. Jg. Vol. 41, Nr. 1, pp. 324-325, 1928.
28. Quero, Roberto: Bol. Soc. Cub. Dermat. Vol. 1, pp. 87-99, 1929.
29. Gennerich and Fordyce: Syphilis and the Central Nervous System, 1921.
30. Schacherl, M.: Deutsch. Zeitschr. f. Nervenheilk. Vol. 77, Nr. 1/6 pp. 234-244, 1923.
31. Somogyi, Zoltan: Orvosi Hetilap Jg. Vol. 67, Nr. 51, pp. 679-680, 1923.
32. Zimmerman, E. L.: Arch. of Ophth. Vol. 54, Nr. 6, pp. 545-565, 1925.
33. Weed: Journ. of Med. Research. Vol. 24, pp. 1, 1924.
34. Schoenberg: Jour. A. M. A. Vol. 66, pp. 2054, 1916, and N. Y. Journ. of Med. pp. 1, 1918
35. Ayer: Jour. A. M. A. Vol. 66, pp. 2060, 1916.
36. Behr: Klin. Monatsblt. f. Augenheilk. Vol. 16. pp. 1, 1916.
37. Stokes and Osbourne: Jour. A. M. A. Vol. 76, pp. 708, 1921.
38. Marinesco: Rev. of Neurol. Vol. 22, pp. 337, 1924.
39. Sicard: Rev. of Neurol. Vol. 1, pp. 325, 1920.
40. Mehrtens and MacArthur: Arch. f. Neurol. Psychiat. Vol. 11, pp. 309, 1919.
41. Goebel: Zeitschr. f. Augenheilk. Vol. 26, pp. 206, 1911.
42. Beriel: Neurol. Centralbl. Vol. 33, pp. 612, 1914.
43. Wegeforth: Journ. of Med. Research, Vol. 24, pp. 129, 1914.
44. Suker, G. F.: Amer. Journ. of Ophth. Vol. 12, pp. 534, 1920.
45. Suker, G. F.: Encyclo. of Ophth. Vol. 16, pp. 12478, 1920.
46. Hamill: Ill. Med. Journ. Vol. 29, pp. 204, 1915.
47. Hammond-Sharp: Jour. A. M. A. Vol. 65, pp. 2147, 1915.
48. Hume, Graydon: Lancet. Vol. 207, Nr. 21, pp. 1064-1065, 1924.
49. Fazakas, Sandor and Jeno Thurzo: Orvisi Hetilap Jg. Vol. 70, No. 42, pp. 1131-34, 1926; Nr. 43, pp. 239, 1926.
50. Fuchs: Lehrbuch der Augenheil Kunde (15th Edition.)
51: Traquair: Introduction to Clinical Perimetry.
52. Schieck, F. and Brückner, E: Kurzco Handbuch der Ophthalmologie.

ONLY A WITNESS BUT—

Visitor in country jail—What terrible crime has this man committed?

Warden—He didn't commit any crime at all. He was going down the street a few days ago and saw one man shoot another, and he is held as a material witness.

Visitor—And where is the man who committed the mu:der?

Warden—Oh, he's out on bail.

CHRONIC ULCERATIVE COLITIS
(Abstract)*
(Report of 174 cases)

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CHICAGO

This work has been in progress since 1925. In 1924 Bargen made a conclusive report on the subject as to etiology and treatment of chronic ulcerative colitis. Up to date our work agrees favorably with the work of Bargen as to etiology —we differ essentially in the treatment, particularly in the component parts of the vaccine used; although Dr. Bargen reports a higher percentage of cures with vaccine they use.

Essentially the vaccine advocated by Bargen is a *univalent* vaccine, while our vaccine is a *polyvalent* vaccine.

We obtained bacteriologic cultures from the colon through the proctoscope and prepared an autogenous vaccine. This is administered in variable doses hypodermically in accordance with the severity and progress of the case. Increase in dosage is gauged mainly by the primary reaction of the first injection. The organisms most commonly encountered are the diplostreptococcus of certain strains, the B. Coli, B. lacti aerogenes, B. acidi Lactici as an individual organism or in combination with others.

Lantern slide A demonstrates the frequency of occurrence of ulcerative colitis in cases of diarrhea. I have proctoscoped over 4,000 cases of which about 2,400 cases were diarrheas. Of this group 174 were ulcerative colitis. In other words about one case out of every 14 cases of diarrhea is a case of ulcerative colitis.

The failures of these cases depend largely on prolonged duration of disease, on resistance to vaccine stimulation, the delay of removal of distant foci of infection and on the presence of hemolytic streptococci as a mixed infection in direct or subculture.

In addition to vaccine therapy we advise a high calory diet of a high vitamin content and low residue. Irrigations of colon by standard astringents and antiseptics has not been preferable in our opinion. Ileostomy and colostomy should not be performed except in acute

*Read before Section on Medicine, Illinois State Medical Society, Springfield, May 18, 1932.

hemorrhages. These hemorrhages are not a frequent occurrence.

It is my sincere wish to convey to you the impression that while our treatment does not show 100% cures it is the treatment of choice in our opinion at the present time.

In the last two years, due to many requests for vaccine from out of town physicians we have been working on a stock preparation made up according to formula based on our work with the autogenous vaccine; the stock vaccine is being prepared for us through the courtesy of an ethical biological firm and will be supplied to any physician who wishes to use it upon request at our office.

It is essential that we understand that while our results with autogenous preparations exceed our results with the stock preparation by 50%—it is second best to no treatment at all for cases that cannot avail themselves of autogenous preparations.

307 North Michigan Avenue

DISCUSSION

Dr. Richard F. Herndon, Springfield: In discussing colitis it is delightful to be limited to a definite entity of chronic colonic inflammation.

I am surprised to note the frequency of ulcerative colitis as reported by Dr. Streicher. In my experience it has been a relatively rare condition, certainly much less frequent than one in every fourteen cases of diarrhea lasting from four to six weeks. I wonder if I have been missing a great many. Some of this difference may be explained by differences in our clientele.

Observation of patients afflicted with chronic ulcerative colitis leaves certain fundamental impressions with regard to the clinical nature of the disease: 1. There is a mild type which, left to pursue a natural course terminates in recovery. 2. Certain patients with the acute form tend to recover and become free from symptoms even though ulcers persist. 3. There is a definite tendency toward recurrence. 4. The factor that seems to determine the presence or absence of diarrhea and tenesmus appears to be involvement of the submucosa with its important nerves, lymphatics and blood vessels.

It has been interesting to watch the literature on this condition and to note the great diversity of treatment. The one fundamental fact seems to be the diet that Dr. Streicher has spoken about. With the exception of himself and Dr. Bargen, most of the other men who have been studying this condition have not been using vaccines. In fact, most observers prefix their diagnosis of chronic ulcerative colitis by the term "non-specific" because there is at present no definite proof of any distinct etiological agent.

Most of the people who have written and reported upon non-specific chronic ulcerative colitis report about the same percentage of improvement and, I just wonder if, in the present state of our knowledge, the bland, high calorie, low residue diet, coupled with fresh air, rest and warmth is not the essential thing.

There are two queries I would like to make. The first is to Dr. Streicher. I wonder if there is anything more than empirical evidence for the use of vaccine? Is there any other reason for the use of a polyvalent vaccine other than the fact that improvement was noted following its use? The second is a general inquiry. Why the remarkable unanimity of results in reporting either cures or improvement in chronic conditions? Why 70 to 80 per cent? In tuberculosis, in syphilis, in arthritis, even in cancer the reports of improvement or cure are 70 to 80 per cent. Why this regular 70 to 80 per cent? Is it psychic or is it real?

Dr. M. H. Streicher, Chicago (closing): The only thing that I wish to say to Dr. Herndon about the reason for our use of the polyvalent vaccine is that we do not entirely agree on the specificity of a univalent organism as the gentlemen from the Mayo Clinic. The reason we do not agree is because the essential organisms, namely the diplostreptococci, are found in the normal stools but not in the same ratio as they do in chronic ulcerative colitis. These organisms have specific cultural characteristics and occur in variable ratios in relation to other organisms that may be present in any given case of colitis. The simple example that I often give to students in our clinic at the University of Illinois is just this: Compare the normal bacterial proportions of any stool against the stool of an ulcerative colitis just as you would compare the leukocyte count in the blood. When the leukocyte count rises from 18,000 to 20,000 we are extremely alarmed. Yet when the B. coli count rises from 20 million to 50 million or the diplostreptococci from 850,000 to 24 million we refuse to acknowledge the meaning of this rise on the same basis.

I know of very few clinics except the Mayo Clinic and our own who have actually gone to work on this and have calculated the bacteria of the stools of these cases against the normal. Dr. Herndon, we have hundreds and hundreds of these on record. As to why percentages reported run about 75 or 78 I cannot say. One thing it means is that our results are not indicative of a perfect cure. We do not mean to be perfect. I might say it is 78 because it is not 28 or 98. Bargen reports a higher percentage in his clinic.

About the difference in type of patients observed, permit me to say that it is my impression that the type of clinic one observes will make the difference. At the Mayo Clinic, where daily admissions have been from 350 to 450, Dr. Bargen observes one case of ulcerative colitis. Of course you realize that type of a clinic is selective and highly specialized. The average incidence at the Research Hospital is considerably lower, yet our admissions are about the same in number. Inasmuch as you do not have the opportunity to do clinic work in Springfield or in other smaller cities in Illinois, you undoubtedly see fewer of these cases. A certain percentage of these cases invariably end up in a large clinic.

A PLEA FOR SYSTEMATIC HEALTH EDUCATION*

J. Howard Beard, M. D.
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Sixty years of epochal discoveries, an acquisition of knowledge greater than during the previous six millennia, and the consequent change in the social order have placed a new emphasis upon the need of the application of science to the improvement of environment, the prevention of physical defects, the avoidance of maladjustment, and the maintenance of spiritual poise.

The necessity for the greater use of preventive medicine in the promotion of health is being thrust upon the home, the school and the college with renewed imperativeness. Parents, teachers, and educators must apply it or fail to make their full contribution to the betterment of health, and to the prevention of disease. Without it they cannot give their complete cooperation to the succeeding generation in adjusting itself to a civilization ever becoming increasingly complex. They must instruct their children and youth how to live as well as how to read, to prepare for a vocation, and to appreciate cultures, past and present.

I should like to indicate briefly the need for the application of preventive medicine to certain problems which confront society and to make an earnest plea that health education be systematic and effective in order to promote personal welfare, racial vigor, and sound social progress.

The urbanization of a greater part of the population, the rise of industrialism, and the development of this machine age were made possible by preventive medicine making cities more than places where people collected to be destroyed by pestilence. The extraordinary development of rapid transportation has increased the hazard from communicable disease beyond the ability of health officials to deal with it without the prompt assistance and support of educated laymen. The application of physical, chemical, biological, and social science to the problems of the home, school, vocation, engineering, and industry, and the complexity of modern civilization make a sound knowledge of hygiene and sanitation essential for the individual to protect himself and his family, and for him to function as an intelligent citizen.

An Urgent Need. During the transition of the last six decades, a terrible price was paid in avoidable disease, suffering, and death because the public did not cooperate promptly, and gave inadequate support to immunization against smallpox, typhoid fever, and diphtheria, delayed the development of sewerage systems, failed to provide safe water supplies, was slow in insisting upon the pasteurization of milk, and permitted unnecessary overcrowding, improper housing, and insanitary environment.

The technical knowledge and methods were available to make living conditions wholesome, but the leaders of the public procrastinated because they did not appreciate the opportunity they had to contribute to the health and happiness of their people or yielded to the siren voice of tradition or to the ignoble influence of quackery, If each citizen had had adequate health education, millions of dollars would have been saved, great suffering would have been avoided, and thousands of untimely deaths would have been prevented.

The great advancement in the application of preventive medicine has been made largely in the fields of communicable disease and in the prevention of infant mortality. This progress has been largely due to the varied and intelligent use of police power by health administrators and to the initiative, persistence and sacrifice of the practitioner. It has required relatively a minimum amount of cooperation from the public. Further increase in the average expectancy of life must depend a great deal upon the willingness of the individual to use measures involving more and more the modification of his habits, and the customs of his ancestors. This is particularly true in the control of cancer, and the degenerative diseases of the heart, kidneys, and blood vessels. Unless the leaders of the community are able to recognize the necessity for the methods advocated by health authorities, will support them, and are willing to set an example in hygienic living, advancement will inevitably be difficult and slow. Until they are educated sufficiently in the elements of preventive medicine to lead in the promotion

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of health in their locality, it will be a victim of "the blind leading the blind."

Social Significance of Health Education. Approximately 35% of the men who matriculate in college have defects which would cause their rejection under the draft. Skeletal defects, defective teeth, poor vision, undeveloped musculature, incorrect posture, heart lesions, deafness, and renal disease speak pathetically but eloquently of what might have been avoided if parents had known how to promote and to protect the health of their children. The golden age for the prevention and correction of physical defects and the formation of wholesome behavior patterns is in the first five years of life, the period when the child is entirely under parental care. If parents are uninformed, their children pay for it in handicaps and less effective lives.

There is no state in the union in which delinquency, dependency, mental deficiency, and social maladjustment are not becoming problems of such magnitude as to threaten its solvency and social stability. This situation grows rapidly worse under the increasing stress of a highly artificial existence. The sources of defectiveness are in heredity, environment, or both, and their eradication is possible only by the concerted action of competent hygienists and intelligent citizens, — citizens who have a sound knowledge which will cause them to seek expert advice and to act effectively in the interest of human welfare. Let us never forget, a specialist without cooperation of the public is as futile as a general without an army.

There are few professions whose pursuit does not involve conditions influencing health which are usually so important as to be decisive in determining the financial and ultimate success of those engaged in them. A knowledge of hygiene is as essential in vocation as oil for machinery. Pneumonia at the Rand, yellow fever at Panama, hookworm anemia in the South, lead in two-hundred trades, the menace of dust in industry, and the blight of malaria to agriculture in the lower Mississippi Valley are typical examples of the inability of workers to escape the disastrous consequences of the lack of sanitation in occupation.

The Misfortune of Misinformation. By press and by radio the public is being urged, in the name of health, to purchase everything from bran wafers to motor cars. A citizen caught in this maelstrom of advertisement without a knowledge of the fundamentals of preventive medicine is as confused as the banker who paid handsomely to have special glass in his solarium when fifteen minutes out of doors in the fresh air and sunlight were as beneficial as fifteen hours in his over-heated sun-parlor.

Each year in Illinois there are approximately 8,000 cases of diphtheria and 750 deaths, and more smallpox than in Italy, France, Germany, Japan, and New York State combined. The reason for this is that in many communities certain influential persons, often college-trained men and women, oppose so well established methods of prevention as vaccination and immunization against diphtheria. They not only jeopardize their own health and that of their families, but by their attitude and example condemn children of their neighbors to unnecessary illness, crippling, and death. Is it possible for education to meet its obligation to society until it has made a systematic effort to insure itself against such disastrous failures?

In a democracy, the revolutionary scientific discoveries of the last three-quarters of a century, cannot be applied to the improvement of public health without the consent of political units. Obviously, if the leaders of the public do not appreciate the possibilities of science to promote human welfare and are unsympathetic with its application to living, research is in vain, lifting the common level of life is a phantom, and progress is a realization for the distant future.

A Plea for Improvement. Our plea today is for sane, scientific, suitable, systematic, health education in the primary grades, in the secondary schools, and in institutions of higher learning to create and motivate a health consciousness which will prove a means for the development of physical and mental efficiency, the creation of a wholesome attitude of mind, and for the cultivation of moral and social qualities. We are advocating an instruction which shall be a decisive factor in determining that healthfulness of environment shall be commensurate with sanitary knowledge. We contend the demand of the hour is for knowledge essential to intelligent participation in

enterprises of civic betterment, and to the assumption of the duty of a well informed citizen. We believe the imperative need is an understanding of hygiene to protect against disease, to guarantee the individual shall function effectively for society for the longest period possible, and to insure the public against the tremendous economic loss and injury to health from fads, frauds, cults, and quackery. We would recommend the methodical dissemination of information having a far-reaching influence on vocational success and on the promotion of the welfare of those engaging in earning a livelihood. In systematic health education, we are urging the use of the best, cheapest, easiest, and quickest method to bring to the public the benefits to be derived from the enormous sums being spent by philanthropists and federal, state, and municipal governments for research.

A nation may create a machine age, excel in labor saving devices, be blighted by unemployment, but ultimately recover. It may establish a record for divorce, embezzlement, and homicide which astounds the world, yet maintain its stability. It may enter a jazz era, emerge with a different moral and religious outlook, and still see a better day. If children capable of being strong, well-balanced men and women are being trained to meet the problems of tomorrow, its future is assured. But if the quality of the life of its citizens is undermined by ignorance, propaganda, bally-hoo, selfishness, and artificiality, neither sky-scrapers, nor cinemas, nor radios, nor armies, nor navies, nor philanthropy, nor culture can save it from the oblivion of Rome, the decline of Greece, or the decay of Egypt.

God forbid that our generation shall be practical men who practice the fatal errors of our forefathers. The race now is between education and catastrophe, with the odds in favor of disaster,—not today, nor tomorrow, but ultimately because sanity, science, and religion seem unable to out-distance fad, folly, fraud, and brutality. We are a people overwhelmed by advertisement, stupefied by bally-hoo, intoxicated by propaganda, and gullible in matters of health beyond the fondest dream of Barnum. I would remind the doubting, incurable optimist who believes every tornado is a pleasant zephyr, that the world continues, but civilizations fall. I would say to him, no great cultures have ever grown old when permeated by disease, divorce, dependency, and crime.

Again, our plea is for systematic health education which, when motivated, will provide the leaders of tomorrow with the wholesome environment, physical vigor, mental alertness, and spiritual poise essential to insure that the republic established in the heart of North America shall endure.

Discussion

Dr. Isaac D. Rawlings, Chief, Bureau of Communicable Diseases, Chicago Board of Health: Dr. Beard's excellent paper covers such a broad territory that it is impossible to do it justice in the few minutes I have for discussion. Therefore, I wish to touch only on that portion which reads as follows: "Approximately 35 per cent. of the men who matriculate in college have defects which would cause their rejection under the draft."

In Chicago, since 1911, a sizable number of physical examinations have been made each year of children in the kindergarten and first grade chiefly, also of special cases referred by the principal or teacher, and of those pupils entering the upper grades who had not previously had a physical examination. By this plan, the aim was to give each school child a physical examination and, if possible, get correction of defects found that needed attention.

You may be interested in the following summary for the past 10 years:

Total physical examinations	1,342,727
Number of pupils with defects	1,110,482
Per cent. with defects	83%
Total pupils whose defects needed correction	924,231
The defects found in the 1,342,727 pupils totalled	3,245,348

An efficient school inspection service covering the inspection for contagious diseases; the preventive work, such as vaccination against smallpox, the immunization against diphthera and the routine inspection of rooms in which a contagious disease has occurred; and the physical examination and correction of defects are all measures which help educate the pupils, the parents and the public, and make for a better class of citizens physically, and many of them also become public-health minded.

Many points in Illinois can never hope for even this much of public health activity until Illinois does provide for county health units.

Three weeks ago I visited my boyhood home at Emporia, Kansas, where the county unit for that county (Lyon county) was sold by Dr. Thomas Parran to that community nine years ago, and they have kept the same live, up-to-date county health officer ever since.

You would think I was exaggerating greatly if I told you of the vast public health improvement in the cities and rural area of that county under the efficient county health unit plan.

THE VALUE OF HEALTH EDUCATION AS SEEN BY THE LAYMAN*

MILDRED DURKEE LANCASTER
NORMAL, ILL.

In order that my point of view may not be mistaken I should like to identify myself as a layman. I am a housewife, a homemaker, an ex-elementary school teacher, university trained in foods and nutrition with the accompanying study of chemistry and physiology. I have had some contact with public health work and am at present the county chairman of Health and Sanitation of McLean County Home Bureau. With this background stated I venture to speak of Health Education and its Value.

We are told Education is the sum total of those experiences which modify conduct; its aims include worthy home and community membership; and that this end is reached by response to selected stimuli. With health education as with all education someone must recognize the aim, supply the selected stimuli, and furnish the materials and methods of reaching the goal.

The public is beginning to develop a health consciousness. We as laymen are beginning to recognize a difference between *negative* and *positive* health. Furthermore we recognize a distinction between individual and community health problems.

Unfortunately our medical profession has been too busy building its own clientele, earning its own bread and butter, caring for its own several patients, passing the layman by with only momentary directions and advice unless very sick, to supply any of the "selected stimuli" or in other words to teach the public the meaning of *positive* rather than *negative* health. This is not a condemnation of the "medical profession." The speaker has grown up with a general practitioner in the immediate family and has an appreciation from the "inside" as well as the "outside" of the big community-burden borne and borne well by the conscientious, faithful, well trained doctor.

But how tragic that the interest of the homemaker in positive health should be aroused through a home made childless because of the lax enforcement of the quarantine law or the absence of a trained school-nurse one of whose duties it is to detect cases of communicable disease in its early stages and exclude them from school. All too frequently such a tragedy is the basis of our interest.

Even though our local health officers are minor political appointees our quarantine laws are fairly well observed as health reports show. This is good as far as it goes. But the price of the childless home is too great to serve as a selected stimulus. The person handicapped in physical stamina through life because he "had all the child diseases" is another. Either is too expensive to use to arouse to making use of scientific knowledge and methods of immunization now recognized and available.

All education comes slowly and with a cost. We who have been aroused are facing with you doctors, nurses and health officers the question of furnishing the selected stimuli for the others. Can the human desire to make our bodies carry us and our children as far as we are physically and mentally capable of going turn the attention of the public to this problem of health? Or is the taxpayer who is "money conscious" going to become "health conscious" because he recognizes the law of individual differences. This law of individual differences interprets the spread of our intelligence all the way from idiot to genius with about 50 per cent of us half way between and with physical fitness bearing a close relationship to mental capabilities. The value of health education can not be talked alone in terms of the individual, it is a community economic problem.

The school nurse who is doing even so limited a job as our school nurse in McLean County is doing a fine constructive thing. Our nurse is on duty 9 to 10 months depending on the amount of money available, and her wages are small. She visits at least once a year the 7090 elementary school children in the 230 rural schools outside of Normal and Bloomington. She weighs the children and gives the usual inspection of ears, nose, throat, etc. Last year she found 1945 pupils, an average of 11.6%, underweight. The results of this examination is recorded on a record card which eventually is sent to the County Superintendent's office. The child having dental defects taken care of by the family dentist is given a button in recog-

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nition, the health poster sent out by our state health department is colored and competes for the prize, the busy schoolteacher cooperates as she can. This is all fine but not enough.

The nurse is overburdened, underpaid. The school teacher? Anyone familiar with her work knows her job has come through the last years to include doing everything no one else has time to do instead of the emphasis in school work being placed on that which the school alone can best do. Every school teacher should have a positive health consciousness and some hygiene knowledge; so should every lawyer and every farmer. But we must not expect unusual capabilities in health education unless that is the teacher's specialty. As yet the economic status of teachers is such their training must include those things which best serve to earn their bread and butter while they teach the fundamentals of life. Health education isn't considered a fundamental yet though any teacher knows the basic principles of heating, lighting, ventilation and sanitation. But with forty active minds to direct she finds no time, were there skill, to give to checking up on whether Johnny's tonsils are enlarged, or Mary's teeth decaying.

Hot school lunches supervised in nearly all rural schools today and the study of foods and nutrition by hundreds of women—1247 in McLean County—under the direction of trained Home Bureau advisers are a factor in the health education for correcting underweight.

But the taxpayer is still wasting his money when a child goes to school physically unfit to "carry home" what is offered him there, or when he, an adult, muffs a business deal because he was "so tired," or enters a sanatorium because his body is unfit.

For a goodly number of years the Parent Teachers Association has been instrumental in conducting pre-school circles and pre-school clinics. In the latter a complete general physical examination is given each child who will enter school the following September. In the Fall a second examination is held to check the number of corrections made. The Home Bureau has cooperated in this work and in my home county is making a survey of the rural districts with the avowed objective of encouraging the complete examination by the family physicians and dentists of every child between one and six years of age. There is no wild hope of 100% results but there is a hope of arousing the public to the value of complete examinations of children and possibly adults and later to the worth of immunization. Complete adult examinations have been encouraged a long time but the per cent of return from adult education is low. However there should be direct results show up from the two-year program of health lessons being given in our county to the 527 4-H club girls, 10 to 20 years of age inclusive.

The taxpayer should convince himself and his family physician it is better to have a complete examination periodically as he does his dental examination even though he feels well rather than wait until illness or "that tired feeling" forecasts a bank account devastating illness or a tax supported rest in a county sanatorium. In connection with the last circumstance a well developed and enforced health and sanitary education could well save much money that is now used in rehabilitation. State law provides the means of caring for the examination and treatment of tubercular suspects, contacts and cases if the taxpayer will just realize money spent in prevention may well save a greater amount to be used in cure. That is if the money be efficiently and intelligently expended.

Considerable has been said concerning a health consciousness which insists on complete physical examinations, corrections, immunization, and quarantine. A phase equally as important and basic to all this is the dissemination of the knowledge of prenatal care of mothers and the post natal care of mothers and babies including the encouragement of breast feeding. Some work is being done through the Home Care classes of recognized home economics courses and through Parent Education and Child Development classes conducted through the Home Bureau but beside these outside the big crowded centers of population there seems that little is being accomplished or even attempted. This education well done may save much of the need of the latter work mentioned before but it must reach fathers as well as mothers.

It is truly a sad circumstance for an intel-

ligent young woman to take up a homemaker's job of rearing a family and not know the dietary needs of her child. There is much authoritative literature on the subject but someone whom she trusts should place it in her hands. Sometimes it is difficult to distinguish propaganda from guidance. Some communities lack the directing genius in this field. We all need nutrition facts.

Sanitation problems of the community must be considered in the development of a community health consciousness. All health examinations, corrections and habits may go for naught if the well water is bad. The state sanitary department is ready to send us explicit directions on how to build our wells so that we may have safe well water, and to test the water from the well and if it be satisfactory on chemical analysis personally examine the well and place a state safe water seal. However McLean County has only 42 seals outside Normal and Bloomington, 13 on rural school wells. In one township a family became a community problem because of typhoid. One resident of the township said, "Maybe we can get somewhere with our well inspection now!" Why must tragedies afford the stimuli?

Given good physique, periodical physical and dental examinations and corrections, adequate nutrition and sanitary living conditions we still may lack positive health. Health habits of rest and sleep, fresh air and sunshine, exercise and work, play and recreation, mental stimulus and poise must take an active part in the life of the health educated person.

The struggle of the individual to produce a livelihood occupies a small and decreasing fraction of his time and energy. This permits and perhaps necessitates a changed viewpoint in regard to the elements of living. In this new veiwpoint constructive, positive health education becomes more and more important. That necessitates a change or modification of the view of the professional man including the doctor.

To this layman it seems, modern medical practices, new knowledge from the laboratories, thoroughly trained specialists and practitioners can afford the materials and technique of adequate health education. A demand for this education is beginning to be evidenced by the public. This demand will grow if the "selected stimuli" are supplied. There are enough organizations interested in the problem. The state is anxious to foster and encourage. It is up to those most thoroughly health conscious to lead the others to a health education commensurate with worthy home and community membership, in a word to select and supply the stimuli.

THE EFFECTIVENESS OF PUBLIC HEALTH EDUCATION FROM THE GENERAL PHYSICIAN'S POINT OF VIEW*

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In my discussion of the effectiveness of Public Health education from the practitioner's point of view, I will give an expression of opinion concerning the topic rather than a presentation of facts. The general physician does not keep the type of office records that will be of value in comparing the amount of preventive medicine practiced now and say ten or twenty years ago.

As I look back I can see much progress in the education of the physician and the layman. A few outstanding advances come to mind. Now people so universally know about balanced diets and the value of the vitamines that it is unusual to see deficiency diseases even in dispensary patients. The broadcasting of the value of breast feeding to infants has resulted in saving many babies from illness and death. Mothers are now better informed about diets for young children and know the value of orange juice and cod liver oil. The value of sun baths is so generally known that stores are supplying sun suits for children.

Women are now coming to us earlier in pregnancy and expect prenatal care. I believe the average physician is giving prenatal care. We periodically check the blood pressure and urine so that we will be informed of the approach of eclampsia. The early diagnosis of syphilis in the mother has allowed us to give prenatal treatment with a consequent prevention of a severe infection in the baby. Preventive medicine is modifying our care of the woman while in labor. Because of the danger of carrying

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infection into the birth canal we no longer do vaginal examinations unless forced to and then only under aseptic conditions.

During recent years allergy, a condition that has made the lives of millions of people wretched, is responding to preventive methods. We can now tell people, with a great deal of confidence, that we can prevent hay fever and asthma. Hives, migraine, colon disturbances and certain types of eczema are prevented in many instances by the elimination of the offending substances from the food or surroundings.

In another field we find that the examination of the milk herds for tuberculosis and the destruction of infected animals has played a large part in the marked decline of bone and gland tuberculosis. Pasteurization of milk and proper refrigeration of food has been a big factor in causing the constant decline in the infant death rate.

Because of health education, people are beginning to realize the importance of early treatment in disease. Formerly effective treatment was often hopeless because of the advanced stage of the disease. Now we are frequently called so early in an illness that diagnosis is difficult. Another indication of health education is the increase in the number of people who appear for periodical health examinations.

We have made progress in the field of immunization. Last year the Illinois Department of Public Health had records of 194,972 children receiving diphtheria immunization. Ten years ago there were very few such immunizations. Last year there are records of 87,150 smallpox vaccinations. Ten years ago, not nearly so many.

It seems reasonable that the effectiveness of Public Health education could be measured somewhat by the mortality rates of diseases that can be influenced by preventive medicine. Typhoid fever, smallpox, diphtheria and scarlet fever probably could be made to cause little or no mortality by universal immunization. Their combined mortality rates of 1930 were only 45% of that in 1920. The rates for various years vary but the trend is downward and represents real progress. The diarrheal diseases of children, that are prevalent where there is poor sanitation and hygiene, have had a steadily declining rate, the 1930 rate being only 30% of the 1920 rate. Infant death rates have steadily decreased, the 1930 rate being 63% of that in 1920. Here prenatal care, better obstetrics and better infant feeding have gradually and progressively improved a formerly bad situation. Preventive medicine and better medical care have helped force the puerperal state rate of 1930 to 65% of the 1920 rate and the tuberculosis rate of 1930 62% of the 1920 rate. In studying mortality rates one must keep in mind the fact that many factors influence them. The activities of the family doctor have been largely responsible for the progress we have noted. During the rush of practice I don't believe the average doctor realizes how important an agent he is in the prevention of disease.

There are several fields of preventive medicine that still challenge us. Venereal disease incidence remains much too high. The number of rabid animals is increasing in the state and we should take some definite preventive action. Trachoma and gonorrheal ophthalmitis still cause blindness. Arthritis now causes as much disability and suffering as most any other disease and several states have already accepted this disease as one of their Public Health problems. Mental disease or inadequacy fills 50% of the hospital beds of the country yet we are apparently only recently realizing that mental hygiene might prevent some of this terrible loss of happiness and usefulness. A large part of general practice deals with treating emotionally and mentally disturbed individuals and we should realize the need for prevention.

There are four outstanding reasons why Public Health education and its program will never be 100% effective. First, there are people who can not be educated along health lines. There are in this state thousands of Christian Scientists and antivaccinationists, thousands of mentally deficient and still other thousands that have as their medical advisers chiropractors, osteopaths, naprapaths and so on. How can we get a health program across to them?

The second obstacle to Public Health effectiveness is the lack of information by the medical profession as a whole and their lack of application of the facts they do know. Clifford Grulee in speaking of the pediatric health problems before the health officers conference here last fall said, in part, "We must first know about ourselves if we are to be of any value in helping others. Therefore, a rather thorough

survey of the physicians themselves and of their education was made. It became very evident from these statistics, as many of us had previously suspected, that the medical school in this country is not fulfilling its duty to the public in respect to the education of doctors who practice among children. Whatever may be the cause for this, the fact is still very evident. Medical schools in the past have had no appreciation of preventive medicine when it demands individual attention.'' The diagnosis and treatment of disease is stressed in the medical school and it is perfectly natural that the physician stresses this part of his work. Treating disease is also attractive to the physician because the patient usually gets well or better. Preventive medicine does not usually have such an easily seen result. Only the laborious compiling of statistics proves the great value of the work that has been done, probably years before. Because of this greater interest in problems of diagnosis and treatment, I believe that relatively few general practitioners meet with this section and I would suggest that men interested in Public Health have some place on the programs of the medical and surgical sections.

Another important factor that retards Public Health advance is the lack of information of the layman and his apparent lack of interest when he is informed. Dr. Kegel has told this section in former years how he met with apparent lack of interest in his Chicago Campaign for diphtheria immunization. It required the personal contacting of the parents by the Public Health nurses to make the drive a relative success. Gieb and Vaughn in Detroit had a similar experience in their diphtheria immunization campaign. After an extensive educational program and with a well organized medical society cooperating, they had contacted only 18 to 20% of the children in need of protection. An extensive check and recheck of the families by the Public Health nurses finally raised the results of the drive to 70% of the preschool children and 80% of the school children receiving immunization. It seems that something more than the presentation of the facts is necessary to make people realize the advisability of protecting themselves.

In discussing the lack of layman cooperation we must remember that the low economic status of a large number of people causes them to put off preventive measures that they consider they cannot afford. In 1926, a comparatively prosperous year, 67% of the families of the U. S. had an income under $1425 a year. On such a budget there was only money enough for necessities and health protection has not been established in the general public's mind as a necessity. At this point I would like to review with you some of the facts brought to light by The Committee on the Costs of Medical Care. I will quote in part from an article by Michael Davis in a recent *New England Medical Journal*. He says, ''The expenditure for organized preventive measures is deplorably low, less than 100 millions or only one dollar for prevention to nearly thirty-five spent for cure. The total of suffering and of expenditure due to disease could be substantially reduced if more adequate sums were put in preventive work. Drugs, medicines and appliances constitute between 20 and 25% of the total, and about half a billion of this goes for worthless or harmful materials. The amount expended for physicians comes to less than 30% of the total.'' A strange situation becomes apparent. We as a nation can throw away 500 million for useless materials yet can see the need for only 100 million to prevent illness and suffering. There is a tendency in Public Health work to lock the stable after the horse is stolen. Epidemics or high mortality rates seem to be necessary to make people appreciate the preventive need.

In considering the obstacles to effective preventive medicine we must not forget the ever present thorns in our sides—the quacks. They have spread their falsehoods for centuries and apparently will continue merrily on. They make no contribution to the welfare of society yet apparently make a financial success of their business.

Let us turn to the future. What can we do to better advance the philosophy of 'stay well'? I have several suggestions to present for your discussion. From the general physician's standpoint they seem practical. First, we should have active federal, state and county or community health departments working in close cooperation. Figuratively they should represent the activity stations from which radiate the preventive medicine and Public Health programs. In my opinion the federal and state depart-

ments are doing a good job. There is room for much improvement in the county and community organizations. I am told there are about 2,700 health officers in Illinois and only about 200 of these are physicians. From this state there are only 58 names listed in the U. S. Directory of Public Health Officers and this small group represents the only active men as far as Public Health educational work is concerned. How are these so-called 'health officers' selected? Their availability is in most instances determined by their political affiliations and not by educational qualifications. In a recent article, Stanley Osborn of the Connecticut Health Department said, "At the present time it is only the rare physician who can step into the position of health officer without special training, for Public Health is truly a specialty just as is any other branch of medicine." Later in the paper he states, "It is rather the rule that physicians of a community will cooperate with a trained medical health officer better than with an untrained physician who may try to take up the reins of Public Health with no qualifications." A recent survey in New York state has caused the recommendation of a full time, specially trained health officer for communities of over 50,000 population, yet in Illinois we see communities of over 70,000 where a busy practicing physician is also the health officer.

The effectiveness of the Public Health program could be increased a great deal by extending education along these lines to the children now in high school and the upper grades. Dr. J. Howard Beard of Urbana brought this suggestion before this section five years ago and has been actively advocating it since. It seems reasonable to me that some knowledge of the methods of keeping well might be as important to the future welfare and happiness of the individual as appreciation of literature, for instance. The individual should be taught his part in the general health program of the community. He does not usually get such instruction at home. A discussion of the possibilities of disease control and prevention as part of the school program would cause a more intelligent understanding of Public Health activities.

I believe that the doctor should give up his long silence and fearlessly tell the world that he has some facts. We have allowed patent medicines, patented foods, various appliances, quacks and cults to prey upon the people and spread false information with but feeble resistance from us. A united profession could stop much of this untruthful advertising. A well organized and active propaganda committee in each county society could give the people of the community some real factual education and, I believe, could effectively combat the misinformation that is now being spread. The Knox County Medical Society in Tennessee is doing work along this line. They apparently have the hearty cooperation of the radio, newspapers and the various women's groups. This state society has a very active educational committee and the county societies could well use it as a medium of starting such community campaigns.

If we plan to extend our education of the laity we must be sure that the physicians they consult about health problems are interested. "Education of the laity requires that physicians be able to answer and participate in a discussion of their questions." Frequent county medical society clinic days and joint county society meetings give physicians an opportunity of learning new methods and ideas with the spending of but little time from their work. I believe that traveling clinics could be made of a great deal of value to the general physician. Dr. Bishop of Tennessee reported to this section in 1928 on the traveling tuberculosis clinic in that state. They have been able to show physicians and laymen the high incidence of that disease and its Public Health aspects.

The entire Public Health program of education and prevention needs the cooperation of the family physician. He can and should be induced to assume the major responsibility of the program. Donald Armstrong has aptly said, "There should exist in every community the facilities for individual medical and health guidance. General broadcasts by radio, through literature, the press, advertisements, and all the wholesale devices available, will not serve to answer intimate personal questions on health and on disease prevention. The private physician should eventually fit in here most effectively."

The community of Oak Park has interested the physicians in health programs by having an active rotating medical Public Health ad-

visory board. After a period of years very nearly every physician there has had an opportunity to see health needs and to take an active part in the programs these needs develop. Participation in a work is the surest way of developing a general physician into an active Public Health worker. It is also the surest and easiest way to educate him in the latest technique, because he will make an effort to keep himself informed.

In 1928 the Health Department of Detroit inaugurated what appears to me to be an ideal relationship of the physician to the community health program. There were then about 1,100 physicians in that city and 90% of them were enrolled in a diphtheria prevention campaign. This enrollment took place largely through the efforts of the Public Health committee of the medical society. The physicians were contacted, the technique and procedures outlined, a standard fee set and provision made for compensating the doctor for his services to patients he considered unable to pay. After the medical profession was all set, the public health officers and nurses carried on an intensive layman educational campaign and finally personally contacted parents who had children in need of protection. These children were all cared for by practicing physicians and several benefits are apparent. First, the campaign was effective in that 80% of school children and 70% of preschool children were protected. Second, the way has been paved for enlisting these physicians in other Public Health activities. And probably most important, the community has found for the first time that a majority of the physicians are interested and active in preventive work. The layman cannot help but feel that if 90% of the profession thinks immunization is advisable there must be something to it. This same united interest can and should be carried into other fields of Public Health activity with an ever increasing effectiveness.

TO THE NTH DEGREE

New Hospital Patient—Say, doctor, I asked that nurse to put a hot water bottle at my feet and she stuck up her nose and walked away.

Doctor—What else could you expect? That was the head nurse?

Patient—Oh, do they specialize that much? Then get me the foot nurse.—Capper's Weekly.

HEALTH EDUCATION FROM THE VIEWPOINT OF THE SCHOOL OFFICIALS*

PROF. J. B. McMANUS
LA SALLE, ILL.

A few generations ago schools did not concern themselves with the health of the pupils. That was a matter which was left solely to the parents until the prevalence of a disease had reached the proportion of an epidemic. Then the community assumed control and discharged the duties pertaining to health indifferently well. During the last twenty years the schools' responsibility has undergone a decided change. Schools are now doing everything, within reason, which their finances will permit, to safeguard the life and health of the pupils. They are now trying to turn out healthy, happy children, well started on the path of successful adaptation to their environment and to the rules of civilized life. Education, in its broader sense includes instruction as to proper diet, proper conduct, proper use of one's mind, body and emotions to the end that a healthy body, a healthy mind and healthy morals will be adequately built up and maintained.

The schools are interested in the physical well being of the children from the stand point of efficiency and attendance. The advent of the public health movement in education has greatly reduced the number of absentees and the efficiency record of those in attendance has been greatly enhanced. The annual scourge of contagious diseases is now practically eliminated. The close cooperation of the teachers and school officials with the Health department enables the physician and nurses to detect the contagious disease in its incipiency, thereby enabling them to isolate such children and prevent the spread of the germ. The examination of pre-school children by physicians to detect correctable defects now throws some of the burden on the parents, to see that those defects are corrected before the child enters school.

While a complete plan of Health Education resolves itself into three distinct, but closely related phases; health service, physical training and recreation, it is with the first of these that we are particularly concerned today. A Department of Health is necessary to stimulate

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health activities and to speak authoritatively, through its physician, on matters pertaining to the health of the community and especially that of the children. It should and does plan a program of health, formulates rules of right living, and constructs a workable syllabus for the inspiration and guidance of the teachers. However, the superintendent and teachers must help to put it into effect. It is the class room teacher, co-operating with the parents who does the actual effective work in health education. A knowledge of virtues does not insure their practice; neither does a knowledge of health habits or rules insure their observance. Teachers must do everything in their power to induce the pupils to practice the rules of right living and to thoroughly master those health habits which are designed to protect their health and prolong their lives.

Prevention is the most effective health work that can be done for the welfare of the community. It is really a composite problem of the home, the school, and the community and must be solved through their co-operation. They must make use of what science has found out for the prevention of sickness and the spread of disease, and do every thing possible to get the children and parents in the right attitude toward health education. When fully awake to the dangers of infection, parents and pupils will work, with teachers and physicians, in an effort to ward off disease. Teachers must work with the Health Department to get the idea across to the parents and children, that certain diseases are caused by germs, which may, by precaution, be prevented from getting into the system. In the course of a few years nature will build up in the body, a certain amount of immunity, which will prevent or impair the growth of disease germs. The children will be stronger and healthier and will not have experienced the dangers and sufferings consequent to attacks of measles, diphtheria, whooping cough, etc.

Before teachers can do very effective work in health education, they should have a knowledge of what science has to offer for the development and maintenance of health. They should know the rules of health and have formed the habit of right living. Teachers' Colleges should make health education a major subject, and then give to every prospective teacher a workable knowledge of such health rules and health habits as should be taught to pupils in the elementary schools. In the meantime, through the influence and efficient work of Health Departments, teachers may and are being taught to realize the importance of health education and induced to master much of the knowledge pertaining thereto. They are becoming better acquainted with correct habits of living and instinctively help their pupils to set up and observe such habits.

Until our teaching force has more completely mastered the necessary scientific information for health education; until they practice rules of health habitually, and until instruction in health education can be done instinctively, a special period on the program must be set aside for instruction and drill on health education. I do not mean to infer that the time will ever come when incidental instruction on health will suffice, but I do mean to say that we can never do effective health work in any one recitation period a day scheme. Much of the health instruction should be incidental and spread over the entire day. Now, the teacher must see that the pupils get the necessary correct information during that period, either from the text or through a series of talks. The teacher must see to it that proper health habits are firmly established by appropriate practices. To do this she will have to secure, so far as possible, the good will of the pupils and the cooperation of the parents.

Teachers need never be so busy that they cannot spare the time to inspect the hands, the faces and eyes of the pupils for cleanliness and for signs of a communicable disease. By giving close attention to all common colds and coughs, teachers are able to detect the sign before the cold is actually developed. By regarding every cold as a possible beginning of a contagious disease, some children are required to remain at home a few days, thus insuring a speedy recovery and preventing the possible development and spread of disease germs. Experience has taught us that children having severe colds or coughs can do very little effective work in school. But if such children remain home a few days, a complete recovery will be effected and the child will be just as far advanced, in

his school work, at the end of the week, as if he had remained in school every day, hampered with the prolonged cough or cold.

A child's conduct, character and mental attitude are acquired very largely from the environment in which he lives. To bring about the necessary change in attitude and mode of living, the teacher must not only be sure of her facts, be concise in her statements, but she must be very tactful so as not to reflect discredit on the parents and the home life of the children. It is more what a teacher is, than what she says. She should exemplify health in her daily work thus encouraging the pupils to attain the good health standard which she has set. Teachers should cultivate an observing attitude, that they may be able to promptly detect or recognize bad heating, ventilating and lighting conditions and regulate them. All this instruction, proper living examples and abundant practice in health habits should develop in the pupils sane, wholesome attitudes toward life and health.

According to Prof. Judd, "Nutrition, in the highly artificial surroundings of civilized life, is not something that can be left to the unrestrained native impulses of childhood." Those impulses or appetites must be curbed and directed either by the better informed and more experienced members of the family or by the teachers. Many of the parents are poorly informed on such matters. Even some educated, well meaning parents have very erroneous ideas as to what their children should eat, as to what they should wear, and also the amount of sleep and rest necessary for healthy growth and development. While we cannot hope to have a dietitian in every school, we are encouraged to hope that most teachers will have sufficient knowledge of the proper kind, and the several varieties of food that children should eat and have at least an elementary knowledge of how such foods should be prepared. If the teacher is tactful and gives out such information, at the right time, couched in language easily understood by the pupils, the parents will be gradually educated and influenced through their children.

The Health Department or Hygienic Institute, as it is called in La Salle, does much to stimulate and to carry into effect health education in La Salle, Peru and Oglesby. The Physician, assisted by the nurses, gives a physical examination each year, to all the pupils in the first, third and fifth grades of the public and parochial schools and also to the first year High School pupils. The school, the teachers, and the parents are becoming more familiar with the work of the Hygienic and readily assist and co-operate with the physician and nurses. Nearly 2000 pupils were examined last year in the grade schools and over 400 in the high school. Ninety four per cent of the grade pupils were found to have some defects. Approximately 75% showed some tooth decay. Efforts are being made to overcome much of the tooth decay by prescribing the proper diet. The results of this effort are not yet definitely known.

There has been a remarkable increase in the number of corrections made during the past two years. The average gain in the number of corrections listed among the grade school pupils of the tri-cities was 37%. However, some of the individual grade schools showed a percentage of correction of over 60%.

Much effective work also is being done in school today in the promotion of health by the school nurse, who goes to the homes, or perhaps deals with the pupils individually, and sets up, through intelligent advice and supervision, habits of good living. Teachers are becoming better acquainted with correct habits of living and instinctively help their pupils to set up and observe such habits. Through special arrangements made by Dr. Ailes, the nurse of the Tuberculosis Society and the Metropolitan Insurance Company, work with the nurses of the Hygienic Institute in covering the territory of the tri-cities. In this way the public and parochial schools in La Salle, Peru and Oglesby are visited practically every day by some one of the nurses.

The Hygienic Institute has launched several schemes, which stimulate great activity on the part of teachers and pupils in the correction of physical defects and in the teaching of hygiene and health habits. One is a health cabinet, made of metal and containing removable cards, which show the several defects, if any, of each child in the room. As the defects are removed or overcome the record on the card is changed to show the progress. Considerable rivalry may be and is stimulated between the children in any school room, or between pupils in the dif-

ferent schools to see which can remove the most defects, and thus improve their health records.

It is difficult to accurately measure the results of health education in any school district during a definite period of time. However, the Committee on Administrative Practice of the American Public Health Association has issued a score form for recording health records, whereby many cities and school districts evaluate their health work. The said Committee has adopted a standard for each item recorded and the school district, by checking their records under the several heads against the standard, can determine wherein it is relatively weak or strong.

Through the persistent and efficient efforts of Dr. Ailes this score form was adopted and put into effect through the Hygienic Institute in La Salle, Peru and Oglesby in 1925. Records were kept and scores were made under fourteen heads, including communicable disease control, popular health instruction, etc. According to those records, our community in 1925 showed a score of 456 points out of a possible 1000 points; while in 1930 we attained a score of 785.

Some of the school rooms in La Salle are organized into health departments, with a President and some assistants, whose duty it is to regulate, so far as possible, the temperature, ventilation, and lighting of the school room. Also to see that the pupils remove their rubbers and heavy coats or sweaters while in the school room. The following syllabus is pretty generally observed and the suggestions faithfully carried out in all the school rooms in the Tri-cities—

A SYLLABUS OF SOME IMPORTANT HEALTH RULES AND HABITS BY HYGIENIC INSTITUTE

1. Be moderate in all things. Do not over or under eat, use beverages to excess, keep late hours, or establish other dangerous or unhealthy habits.

2. Establish good, regular daily habits, especially as to eating, sleeping and bowel movements.

3. Meals should be balanced so that the daily ration contains milk, butter, meat, eggs, vegetables and fruits. There should be some coarse foods, plenty of salads and water. Plenty of time should be taken at the meal and the food should be well chewed.

4. Your homes should be heated to a temperature of 68 degrees F., to 70 degrees F. Provide for a change of air, without a direct draft, through windows and doors, in moderate temperature. Bedroom windows should be opened at night, but regulated according to outside temperature and the force and direction of the wind.

5. Keep clean. It is very important to bathe the entire body at least once a week, brush the teeth daily, and especially to wash the hands after toilet and before eating.

6. Take 8 to 12 hours of sleep every night, according to age in a cool, well ventilated room.

7. Wear loose, porous clothing, suitable in weight and warmth to the season and the weather. Better wear light clothing and be prepared with suitable outer garments to be worn as circumstances warrant.

8. Avoid needless and close contact with those suffering from a communicable disease to which you are susceptible. Avoid others when you are sick yourself. Cover the mouth or nose in coughing or sneezing. Keep fingers, pencils, etc., out of the mouth.

9. Inspect closely and report to the nurse or physician any unhealthy sign of the children's hands, face, eyes, teeth, gums, tonsils, ears and especially defects of vision and hearing.

10. Encourage every child that has not been vaccinated or immunized against smallpox, typhoid fever, diphtheria and scarlet fever to have this done.

It may be entirely too ambitious, yet I like to hope that the time may come when according to Prof. Sutton, Public Health Authorities, cooperating with the schools, shall succeed in instilling into the minds and hearts of the rising generation the idea that they are the bearers of the life and health of the race. They must be led to realize that since they are but the temporary bearers of the life stream they must guard it with the greatest care, so that they may enjoy life to the utmost and pass it on unimpaired to the next generation.

(I received many helpful suggestions from Dr. William A. Howe, Chief Medical Inspector, Albany, New York.)

CONSCIENCE UNNECESSARY

"There was a certain prominent physician who had a serious operation to perform on one of his patients," said the farmer. "During the operation the physician became rather nervous and excited, and instead of removing the membrane he was after, accidently took out the man's conscience."

Here the farmer stopped.

The lawyer inquired, "Well, what became of the patient? Did he get well?"

"Oh yes," replied the farmer, "but having his conscience taken out he was not fit for anything else, so he studied law."

THE VALUE OF PUBLIC HEALTH INSTRUCTION AND PUBLIC HEALTH WORK AS SEEN BY THE PUBLIC HEALTH OFFICIAL*

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A few years ago Great Britain sent out to India one of her promising young men to take a place in the government of that vast but backward country. He found in that land a curious mixture of poverty and potential wealth. Along the banks of the Indus River he saw thousands of fertile but barren acres. Crops had never grown there because the rainfall was insufficient.

Great possibilities took shape in this young man's mind. Along the banks of that great river vast wealth in the natural fertility of soil was going to waste. Through the very midst of that potential wealth flowed a never failing volume of water. Back in his native country was the engineering skill fully able to divert that water into the fields. Utilizing the skill of the engineer to bring the water into the barren fields was the task which alone was necessary to tap an endless source of wealth where only poverty had before prevailed.

As a result of that vision the great Sukkar Dam was opened early this year. The 6,500,000 acres of hitherto parched land will furnish profitable farms for 2,500,000 Indians. Out of that land will come annually 600,000 bales of cotton, 1,500,000 tons of wheat, 500,000 tons of rice, 120,000 tons of oil seed and 300,000 tons of native food and grains. The $120,000,000 spent in building the irrigation system made it cost just $48 each to provide a profitable homestead for 2,500,000 farmers.

Another story of an engineer interests me in a similar way. This man was on the train in Pennsylvania with the Chancellor of the University of Kansas as his travel companion. The engineer was grumbling about his inability to find a suitable place for his vacation. "Why," asked the Chancellor, "don't you go to Atlantic City?", observing that it was near at hand. "I don't want to go there. I was there last year," was the reply. "Don't you like the beach and the board walk and the hurdygurdies?", the Chancellor insisted. "I do like those things," replied the engineer, "but do you know, when I sat on those steel piers that jut out into the Atlantic, and saw the great tides come sweeping in and when I realized that every day more power goes to waste than would be required to light and heat every home on the Atlantic seaboard, it made me sick."

These two stories illustrate very well the position of the public health official in respect to the value of public health instruction and public health work. In Illinois this public health official sees a vast amount of needless wastage of human life. He sees on the other hand a never-failing source of knowledge, flowing through the channel of the medical and sanitary professions, which if applied properly would convert thousands of lives made barren by preventable sickness into rich human experiences measured in terms of both happiness and economic benefit. Every time he looks at a sheet of vital statistics he sees evidence of thousands of useful years cut off from human life, not only by communicable diseases but by such things as cancer. The thought of it makes him sick.

Like the Englishman who saw life for barren fields in the water of the Indus River the public health official in Illinois sees flowing in the channel of medical and sanitary knowledge a vitalizing force which has the power to prevent or modify typhoid fever, diphtheria, smallpox, tuberculosis, rabies, measles, scarlet fever, whooping cough, malnutrition, syphilis, gonorrhea, cancer and ill health in general. Here and there throughout the country these channels of knowledge have been tapped by laterals which have resulted in the spread of this knowledge to whole communities which have succeeded in eradicating completely some diseases and in greatly reducing the prevalence or fatal and disabling character of others. This history leads him to believe that a whole population like ours in Illinois can be irrigated with medical and sanitary knowledge sufficient to eliminate or at least reduce losses that are now heavy both in economy and human experience.

The value of public health work seems too obvious to warrant discussion. Who, for example, would wish to turn back the calendar to

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the days of yellow fever when strong men turned pale and whole communities fled in terror from their homes at the approach of that disease which paralyzed commerce and left destruction in its wake? Who, indeed, would choose to live through the gay nineties when typhoid fever killed its thousands while diphtheria and tuberculosis killed their tens of thousands? Who would go back to the days before the practice of pasteurization made milk relatively safe for city children? Who would bring back malaria and cholera which public health work has successfully combated? To ask these questions is to answer them. One after another communicable disease has been brought under control through the practice of what is generally understood as public health work and this success makes possible city life as we find it today.

Of course, public health work and preventive medicine can go forward no faster than the public demand or at least public toleration. The profits from public health work are large, similar in magnitude to the anticipated returns from the investments in the Sukkar Dam, but the activities cost money and the public must pay the bills. Public health instruction must, therefore, precede public health work.

A particularly striking example of what may be expected when the knowledge of preventive medicine becomes general enough to result in popular support of an efficient and adequate public health service on the one hand, and the practice of preventive medicine by the medical profession on the other, is the experience of New Haven, a city of 162,000 people. Some outstanding contrasts in the terminal years of the last half century are as follows:

	Deaths per 100,000 People	
	1881	1931
Diphtheria	90.0	0
Scarlet fever	13.5	0
Smallpox	2.0	0
Typhoid fever	43.2	0.6
Whooping cough	4.5	0.6
Tuberculosis	393.1	54.7
Infantile diarrhea	109.0	1.8
	655.3	57.7

Here are seven diseases which last year caused 94 deaths in New Haven. Had the 1881 rate prevailed these same seven diseases would have caused 1,062 deaths in New Haven, to say nothing of at least 10,000 cases of sickness from which the patients survived. The public health service in New Haven costs $1.02 per capita. In relation to results from preventive medicine the public health service corresponds in function to the irrigation system in relation to results obtained from cultivating the soil which is thereby watered. With this in mind you may draw your own conclusions as to the value of public health work.

New Haven was selected as an illustration because reliable records go back over a longer period and were easily available in serviceable shape. No less striking improvements have taken place in Illinois. Evanston has a health department which will compare favorably with that of any other city in its class in the United States, and the people of that municipality have been so impressed with the results of its activities that they not only refused to curtail appropriations in this year of economic distress but made possible a new undertaking. Rockford has done some remarkable public health work and maintains a splendid department of health. The City of Chicago has been able to practically eliminate a number of diseases and make life both safer and longer. Winnetka has done some very commendable work, the outstanding character of which is illustrated by the fact that whooping cough has been so managed as to prevent fatal termination of any case in recent years. For Illinois as a whole the three diseases of typhoid fever, diphtheria and tuberculosis cause nearly 25,000 fewer deaths annually than would be the case if the 1890 rates prevailed. Last year there were 27 Illinois cities of more than 10,000 population each which experienced no mortality from diphtheria and 40 cities of the same class that had no deaths from typhoid fever.

Now a glance at the other side of the picture. Four years ago Montreal experienced the worst epidemic of typhoid fever of modern times. Over 5,000 cases developed and caused over 500 deaths. The health department, it seems, was efficiently manned but could not function efficiently because of local circumstances. This illustrates the fact that the danger of diseases which have been practically eliminated is ever present and will reappear on a large scale if barriers are broken down.

More disquieting still is the observation that airplanes arriving in Florida from Central and South American ports may bring hidden in the fuselage live mosquitoes of the yellow fever carrying variety. Since yellow fever still persists in certain parts of Brazil and reappeared in Colombia as late as 1929 with Africa still a great reservoir of the disease, the value of public health work which will prevent the introduction of infected mosquitoes into this country through airplane traffic need not be emphasized.

To a young bookkeeper in Chicago or a taxi driver in Detroit whose votes are equal in weight to those of doctors and lawyers, the employment of able bodied men to search airplanes for mosquitoes might seem to be the height of governmental folly. This would certainly be the case were it not for the possibility of public health instruction. To a person who is familiar with the story of yellow fever along the Atlantic seaboard and in the lower Mississippi Valley, any cost within reason is not too great to incur in preventing the liberation of yellow fever carrying mosquitoes in this country.

Coming of the machine age has had a profound influence over the value of public health instruction. On the farm a case of sickness, unless it happens to be long drawn out, is not accompanied by the devastating economic distress which is apt to follow ill health in the wage earner and even among the relatively well-to-do of the city. The cattle continue to graze, the corn keeps on growing and hens cease not to lay and cackle, while the farmer is convalescing, but wages stop forthwith when the worker is unable to report for duty. Knowing how to prevent disease becomes therefore a matter of the most vital concern under present day social conditions which have reduced the rural population to a fraction of what it formerly was and by the same token have greatly enlarged the urban population. Machines make possible more frequent and more general contact of people with each other and this greatly increases the possibility of spreading communicable diseases.

The public health official recognizes three outstanding principles which govern the value of public health instruction. First, the magnitude and character of the condition or problem which is to be attacked must be clearly defined. Second, the application of preventive measures must be properly timed. Third, the process of prevention must be economically and scientifically sound.

Lately the Massachusetts State Department of Public Health has discovered that chronic rheumatism is economically the outstanding chronic disease problem in that State certainly, and perhaps in the United States and even the world. Although, as is pointed out in the report, 60 per cent. of chronic rheumatism patients are subject to improvement which will restore complete or partial economic recovery, over two-thirds of these patients are either receiving no treatment at all or self treatment. The percentage under treatment varies with the economic status of the patients but even in the well-to-do group less than two-thirds were under medical treatment. The public health authorities in Massachusetts made an actual canvass of one per cent. of the population and estimated on that basis that at any one time Massachusetts has no less than 150,000 cases of chronic rheumatism and that 6,000 of these are completely disabled.

Applied to Illinois these figures suggest the presence of over 260,000 cases of chronic rheumatism in this State with 10,000 completely disabled. Here is a tremendous problem about which nothing is being done and which is practically unknown except to a few students of public health. The public health official sees incalculable value in a program of public health instruction which would result in bringing competent medical skill into successful contact with the victims of chronic rheumatism and which would venture to prevent this affliction.

In New York, the State Department of Public Health has recently discovered that a new case of syphilis comes under treatment for each four births reported annually among the upstate population. In other words, four new cases of syphilis per 1,000 population came under treatment in 1930 and the birth rate in that year was about 16 per 1,000. Few diseases are more expensive to treat than syphilis. Few can result in greater economic and health damage to the patients. Bringing to light these startling conditions has already led to a program of control and prevention of great prom-

ise in New York. That result can be credited to public health instruction.

The very possibility of studies like these two depend upon public health instruction. The public must be willing to provide an organization strong and efficient enough to make this type of research possible.

Once a public health problem is discovered and the means of solution are available, a vast amount of energy, expense and disappointment can be avoided if the control measures are applied at the proper time.

If the barren fields along the Indus River are made to yield maximum crops the water must be diverted from the river into the irrigating canals at the right time. Godfrey has shown that some communities have failed to prevent serious outbreaks of diphtheria when as high as 70 per cent. of the school children over five years of age have been immunized against the disease. The same author has shown that other communities by immunizing no more than thirty per cent. of the children under five years old in addition to fifty per cent. of the five to nine age group, have produced an immediate and striking decline in the diphtheria rate. Harrison expresses the opinion that the immunization of one child under five years old is equivalent in its influence on the death rate from diphtheria to the immunization of three children of the school age group.

Working in another field, Bower found in a study of 8,216 cases of appendicitis which received hospital care in Philadelphia, that the ailment proved fatal to only one in thirty-nine patients admitted to hospitals for surgical treatment within twenty-four hours after onset of symptoms. Among those admitted after the lapse of seventy-two hours, however, one in ten failed to recover. The fatality rate among those admitted between these two extremes was in similar proportion. Applied to Illinois these data indicate that over 600 lives would be saved annually if appropriate treatment was resorted to in all cases within twenty-four hours after onset.

In connection with cancer, the importance of early treatment is even greater. Childe, who has had a wide experience with this disease in England, declares that:

"Approximately one-third of all cancers in males and one-half of all cancers in females, occur in situations which must attract early attention to their victims and are capable of removal and therefore of cure."

At the same time the Massachusetts State Department of Public Health, in a study of 1,252 cases which came to the State-aid clinics for advice, found that the median delay between first symptoms and first consultation of a physician is six and one-half months. Educating the public in a way that would cut down that element of delay in obtaining competent medical advice from six and one-half to one or two months offers the substantial hope of saving from fatal cancer about 3,000 people annually in Illinois. The Indian farmer who waited until the leaves of his young cotton plants had withered and begun to dry before calling for water from the irrigation officer could not expect a heavy yield of mature cotton.

Perhaps the outstanding subject of controversy at the moment in the field of medicine and public health relates to maternal mortality. Nearly all of the agitation revolves around the delivery room. Reliable studies show, however, that the difficulties which lead to fatal termination in a large percentage of the deaths under modern conditions begin long before obstetrical service needs to be considered. Miss Grace Abbott, chief of the federal childrens' bureau, for example, reports that one out of every four maternal deaths due to puerperal septicemia is preceded by induced abortion. Responsibility for induced abortion could scarcely be laid at the door of the delivery room. Studies in Illinois show that involuntary abortion precedes septicemia in another twenty-five per cent of fatal cases attributed to this condition. Even if the quality of the medical service where induced abortion appears is culpable the reason is that the illegal objective of the patient steers her away from high grade doctors. Again, the State Department of Public Health in Tennessee has shown that the maternal death rate among women who received prenatal care through county health departments was only 2.5 per 1,000 births, while the rate among those in the same county who received no prenatal care was 8.3 per 1,000 births. The New York Maternity Center Institute reports that among

its clientele who receive prenatal care the mortality rate of mothers from complications of childbirth has been reduced by 66 per cent. The Commonwealth Fund has demonstrated similar results under widely varying conditions. While the accuracy of statistical evidence in reference to the value of prenatal care has been questioned, it would seem that a physician who interests himself in prenatal care would be satisfied with nothing short of the best obstetrical service. Good prenatal care, in other words, may be calculated to foreshadow good obstetrical care in a large majority of cases.

Emphasis might be, therefore, very profitably shifted from obstetrics to prenatal care in the efforts to cut down maternal mortality. Incidentally, prenatal care has a profound influence over the welfare of the prospective baby as well as that of the mother. It seems probable that the skill and ability of available medical and hospital service is able to safeguard the lives of prospective mothers to a much greater degree than they are permitted to attempt. The public health official sees in the situation the possibility of great improvement by a shift in the time of utilizing medical knowledge. The greatest immediate benefit would seem to be dependent upon adequate prenatal care.

These illustrations concerning the time element apply to the whole field of preventive medicine. Time is a factor of the greatest importance in the success of any preventive procedure and no less in respect to health than anything else. Sometimes this factor is measured in the age of the individual or population concerned. Sometimes it is measured in hours or days after onset of certain conditions. Always it is involved in matters of health. The public health official recognizes in no uncertain terms the futility of bolting the window after the baby is stolen.

Economic and scientific soundness in public health instruction might be taken for granted. There are, however, strong forces at work to the contrary. Vaccination has great opposition which demonstrates liberal endowment with financial resources. Advocates of raw milk are neither idle nor poverty stricken. Commercial interests are quick to appropriate any and every procedure of official or scientific sanction to exploitation for easy money. The far-reaching influence of these movements manifest themselves daily on every hand.

Recently, for example, a campaign to promote the use of toxin-antitoxin was started in Springfield. A mother of more than usual intelligence was approached concerning her young son. "None of that poison will ever be injected into the pure blood of my child", she declared with emphasis. That statement disclosed a mind free from all basic knowledge concerning the immunizing processes which effect all children in this country whether stimulated by artificial or natural means.

Another Springfield mother, the wife of a young lawyer, recently heard through neighborhood gossip that tuberculosis had been found among the cattle at the dairy from which she obtained raw milk. Careful inquiry at the State veterinarian's office verified the rumor. For four years this mother has fed to her baby unpasteurized milk from that dairy. She believed that pasteurization destroyed some important nutritional value which justified her in taking the chance of contamination of raw milk. There are over 10,000 dealers in Illinois who handle only raw milk. Customers of these dealers believe erroneously that nutritional benefits of raw milk outweigh the health risks involved.

These various phases of the problems involved in public health work and public health education indicate that there is on the one hand a great need for the practice of preventive medicine. On the other, there is available the knowledge, skill and other facilities which may be applied so as to meet the needs in a way that results in vast benefits from the standpoints of health and economy. The principal shortcoming seems to be facilities for bringing together in a practicable way the need and the remedy. This is exactly the function of official and voluntary public health agencies. The departments of public health are to the field of preventive medicine what the irrigation system is to fertile acres which need water in order to produce crops. Health departments are channels, like the canals through which flow the vitalizing power from its source to the place of need. Utilization of the knowledge is a matter which devolves upon the individuals and the groups who benefit therefrom.

The State public health official believes, therefore, that the building up of efficient local health departments or agencies not only gives promise of great public benefit, but is necessary to the reasonably adequate utilization of preventive and curative medicine. The public health official is not primarily interested in what form local health organizations assume. Experience, however, has indicated that the most satisfactory results are obtained when the agencies are under official supervision.

Thus at LaSalle, Peru and Oglesby, an agency financed from voluntary funds finds that it can work far more efficiently when the medical director is endowed with the legal resources of the official health officer in the communities served. In Evanston, likewise, the voluntary agencies very cheerfully accept the general supervision of the city health commissioner because more and better results can be obtained in that way.

H. G. Wells declared in his *Outline of History*, that "Human history becomes more and more a race between education and catastrophe."

There are all sorts of catastrophes. The world might collide with some other celestial body. Some trick of fate might cause the world to burn or freeze. According to one new theory the universe is expanding very much after the fashion of a rubber balloon under inflation. In that case the whole thing might burst some day leaving a vast empty void where once the earth and other celestial bodies were wont to travel.

Mr. Wells probably had no such physical catastrophe in mind. He saw in the changing social conditions increased danger from disease and from the deterioration of race stock. He saw on the other hand the possibilities of controlling the factors which influence the health of body and mind. Disregard of public health education will certainly invite the catastrophe which Wells had in mind. It is the primary function of official health departments to steer public health activities into the right channels at the right time.

DISCUSSION

Dr. Isaac D. Rawlings, Chief, Bureau of Communicable Diseases, Chicago Board of Health: Public health educa ion and instruction, as a rule, must precede all important public health accomplishments.

To illustrate, for several years prior to 1891 there was much discussion in the public press and elsewhere as to the benefits that would accrue to the people of Chicago if a drainage canal could be constructed to make the highly polluted waters of the Chicago river flow away from Lake Michigan instead of emptying that sewage into Lake Michigan, Chicago's water supply.

The benefits to be derived were repeated and reiterated time upon time, stressing these benefits in terms of lives saved and sickness prevented. The intrinsic value of this construction of a drainage canal was estimated in dollars also. Without such public health instruction and education, it would have been impossible to have persuaded Chicago's citizens to tax themselves over $45,000,000, an enormous sum in those days, to pay for this drainage canal. Yet, the wildest dreams of the health officer of 1891, with his city constantly cursed with typhoid epidemics and hospitals crowded with cases, were far short of the real benefits that have resulted, largely from the moneys expended for that drainage canal.

To show these benefits, let me tell you of Chicago's typhoid fever record in 1931, when the lowest level in her history was reached with but 97 cases and 13 deaths. When we contrast this record with that of 1891, when the agitation for the building of the Drainage canal was at its height, we learn that had the rate of 1891 still prevailed in 1931, Chicago would have had over 60,000 cases of typhoid fever instead of 97 cases, and over 6,000 deaths, instead of 13. Estimating the value of a human life at $5,000, this saving for this one disease in one year had a financial value of over $300,000,000, and each year the $45,000,000 invested in 1891 to 1900 in building that Drainage canal is yielding in interest six times the amount of the original investment.

I know of no better illustration of Baxter K. Richardson's oft repeated statement that money invested in public health yields not only a large interest return, but also a big bonus.

We do not need to go as far away as New Haven to get statistics, for in our own state we have an equally striking example of the value of public health work.

The city of Chicago shows these contrasts:

Deaths per 100,000 people

	1881	1931
Diphtheria	186.9	6.2
Scarlet fever	34.6	5.1
Smallpox	218.5	0.0
Typhoid fever	105.2	0.38
Whooping cough	29.1	2.3
Tuberculosis	220.0	66.2
Measles	20.4	1.8
Total	814.7	79.6

These diseases in 1881 caused 4,402 deaths, and in 1931 but 2,753 deaths. If the rate of 1881 had prevailed for 1931, there would have been 28,186 deaths instead of 2,753, to say nothing of over 280,000 cases of illness prevented.

Here is another splendid example of the value of preventive public health work, much of which is due to public health education over a series of years.

After years of public health instruction and education on the value of the pasteurization of the milk supply for a

large city, we find that in Chicago in 1916, for the first time, all milk was pasteurized, except one per cent, which was certified.

During the five years prior to 1916 there were 13 milk-borne epidemics embracing more than 10,100 persons, and the striking thing is that not a single milk-borne epidemic has occurred in the last 16 years. This is real preventive health accomplishment.

Another illustration of results achieved largely through public health education and instruction is Chicago's smallpox record.

Without a compulsory vaccination law, almost 1,000,000 (983,876) vaccinations have been made in Chicago since 1920 by the Chicago Board of Health alone, while the total births for this period number less than 700,000 (694,024). Note the result of this continuous vaccination.

In 1931 Chicago had but 58 cases of smallpox, which is the least yearly total, except one, since 1916. The rest of the state of Illinois reported over 1,700 cases of smallpox in 1931, and a goodly number were in Northern Illinois. As it costs Chicago about $150 to hospitalize and care for each smallpox case within her limits, it represents a worthwhile financial saving if Chicago can have only one-thirtieth as much smallpox to care for as does the rest of the state.

Another good illustration of the value of public health instruction and education is the toxoid-toxin-antitoxin campaign over the United States. The value of this preventive procedure had to be sold to the fathers and mothers before consent for the actual immunization could be obtained.

In this connection, you may be interested in that phase of the toxoid-toxin-antitoxin campaign in the parochial schools of Chicago. After much preliminary ground work, and numerous conferences between His Eminence, Cardinal Mundelein, and his representatives and the president of the Board of Health, Dr. Bundesen, and his co-workers, in one week there were distributed to every Catholic church in Chicago enough of these leaflets in eight languages so that each parishioner in each Catholic church should have one in the language he understands. These were distributed after each mass on Sunday, April 3. A letter from the Cardinal had previously been sent to each church and parochial school urging the full co-operation of those in authority in getting to their school at an announced time all preschool and school children for the immunization of all against diphtheria.

The Chicago Board of Health sets up an immunization center in one parochial school after another until all this work can be completed.

This plan is especially valuable in reaching the preschool groups and can only be done efficiently in the parochial schools with the full and complete co-operation of those in authority.

These are but a few, taken from the many convincing Chicago examples of the truth that public health education and instruction must precede and lay the foundation for many important preventive public health programs.

"The doctor will see you inside," said the nurse as she helped the patient onto the operating table.—*N. U. Purple Parrott.*

DISCUSSION OF SYMPOSIUM ON HEALTH EDUCATION

Dr. H. E. Kleinschmidt, New York City: Dr. Beard's eloquent plea for systematic health education presents a somewhat gloomy picture of the race between education and final disaster. Moses, in leading the children of Israel to the promised land, spent some forty years in the wilderness. I have a hunch that he was deliberately lost for forty years, waiting for a new generation to rise. I sympathize with the spirit of Dr. Beard's paper, that we must make a more definite and conscious effort to get out of this wilderness before disaster overtakes us.

He said some excellent things about leadership without a following. The health officer is armed with knowledge. He could lead us from the wilderness if he had intelligent followers. Public health progress is held back by a lack of information and appreciation on the part of the people.

Teaching the fundamentals of hygiene is important —not merely the learning by rote of rules, for medical science is a living science, growing day by day and, unless people are trained to reach sane conclusions, progress is not going to be very steady.

Speaking for the layman, Mrs. Lancaster sounds this note, that it is important to cultivate in the people a health consciousness. Good! but let us not forget that there is danger of going too far with health consciousness. Health is not an end in itself, but merely the means to an end. Doctors are familiar with that pest known as the neurasthenic, who is constantly worrying about his "innards."

As the symposium went along, evidence piled up to show that after all there is no reason for discouragement, for speaker after speaker cited examples for accomplishments, such as the wiping out of smallpox in certain places; the great reduction in deaths from tuberculosis and typhoid and so on. Health education is already bearing fruit.

Dr. Lewis spoke of the increased demand for health protective procedures on the part of patients. He also said that something more is necessary than the mere presentation of facts. While he did not use the word "hormone," he probably had that in mind. We need an activating "hormone" or motivator which will cause people to act. In modern advertising you will find that the "kick" at the end of every advertisement, the final impression that is left with the reader, is to "do something about it," to act. It is not enough to give people information, hoping they will carry out the desired actions.

Dr. Lewis also had a few kind (?) words to say about the so-called political health officer. The butcher, the baker, the candlestick maker, may still serve as the township health officer. That protection against scarlet fever, typhoid and a host of other dangers may depend upon an untrained layman, appointed perhaps by a political ward heeler, is deplorable.

Dr. McManus, speaking for the schools, suggested something very excellent, I think, and that is that health education in the school is a matter of living it day by day, making health instinctive as it were. Robert Ingersoll once, in one of his fiery orations,

shook his fist and said, "If there is a benevolent God, why did he make disease and not health contagious?" and the reply was that health *is* contagious.

Dr. Richardson gave us the suggestion of the river whose power to make fertile the land, is being wasted. He suggested that what is needed is a little engineering, *in other words, better educational technic.* Health facts we have but we fail in delivering them. We still relegate health education to the office boy. Marvelous strides have been made in school health education; the training given in our normal schools is most excellent, but in mass education we are still very *much behind. Some of the health publicity now issued* is terrible if compared with modern advertising. We must learn to deliver the goods to the people in an interesting and entertaining way. Delivering health education to the people is not a job for the Jack of all trades. We need very definite methods and means of delivering health messages to the people.

I have great respect for the old-fashioned doctor, the saddle-bag doctor. Perhaps he didn't know much. *He read his Gray and his Osler and little more but* he did much good. He was the Father Confessor, *made sacrifices, served the people well. But in the* present day, that is not enough. Today we need the scientific doctor with instruments of precision, the x-ray, the electrocardiogram and what not. We are no longer satisfied with saddle-bag medicine. Similarly we must get out of the era of saddle-bag health education and become more scientific.

DISCUSSION ON SYMPOSIUM FROM LAYMAN'S POINT OF VIEW

Mrs. N. G. Symonds, Hinsdale: Dr. Beard's paper *is most comprehensive and challenges our attention.* Health Education in order to be of value must include mental, moral, and physical health and be linked up with the economics of state and community.

There seems to be an air of ineffectuality about our efforts as laymen that might make one terribly discouraged, but we dare not cease to hope. There must be ways and means of intriguing the attention and interest of the leaders of communities who will "recognize the necessity for the measures advocated by experts in preventive medicine and who are willing to *set an example," as Dr. Beard has said.*

I have always maintained that to be a successful *housewife and mother one had to be a "Jack-of-all-*Trades." If one doesn't actually perform all the duties that go to make up a smooth-running household and happy family, at least one must know how, in order to secure for herself and those she loves, the best services and values, from those who wait upon her.

A group presentation of this important subject brings with it a distinct challenge to any housewife and mother. Laymen should be intelligent concerning *all such phases of Health Education as are presented* here this morning—an analysis and interpretation of *which lie well within the reach of organizations who* are striving to create a better understanding of the *importance of good health in relation to education, morals,* happiness, and the good life.

Health Education is at the crossroads—four ways to go—backward, left, right, or forward. What elemental standards shall we strive to build and maintain against *all* odds?

*Four words have been brought to my attention re*cently, during this "winter of our discontent": Impression, Opinion, Knowledge, Conviction. Impression *touches simply the outside of our lives. Opinion is* an acquaintance who nods to us and is rarely a part of ourselves. Knowledge is a servant, impermanent, more or less impersonal, and the possession of it may not result in conduct; but—Conviction is our own child—is a living, compelling motive in our conduct. *So it is with my attitude towards the place that lay* groups should occupy in a Statewide Health Education Program.

Many people's attitudes go no farther than Impression and Opinion. Knowledge may entirely fail, may be laid away on the shelf. Years may be spent on dead languages, and living interests be smothered under the weight of learning. But—only Conviction organizes a life and sends itself out to bring about results. *So, we must find fresh courage to attack these problems.*

We must educate our lay groups to a fuller realization *of their responsibilities for health. We must* set up a health standard for our teachers, though we all know that except in the fundamentals of hygiene, their judgment would not be acceptable to the medical profession or the mothers. They, the teachers may be fully aroused to a sense of their exalted duties, but they must always and always reckon with the mothers. If the mothers are victims of fixed ideas, then the more potent influence of home will seriously hinder the education of the child. Our hope lies in educating the children.

My principal contact in promoting Health Education is with the Illinois Congress of Parents and Teachers. *We are an educational group—we are 33 years old in* Illinois, with an individual membership of about 93,000 —carrying a statewide program of Child welfare on an annual per capita dues of 20 cents, 5 cents of which goes to our National Organization. We are entirely a volunteer group, no salaries are paid except for office stenographers. Volunteer Service is beautiful, it needs to be perfected, but lay organizations are powerful, and they are moulders of public opinion *through education.*

It lies within the precinct of lay organizations to set *up simple standards of healthy living as a plan of* work in regard to rest, cleanliness, daily health habits, medical and dental care, and a general knowledge of legislation concerning health and safety, and of local ordinances pertaining to communicable disease.

If specific methods of our work along Health Education interest you, I might list, Study classes, book reviews, schools of instruction, dramatics, health clubs, Roundtable Conferences, Loan Papers, Speakers Bureau, questionnaires, programs built around findings of *the* White House Conference on Child Health and Protection, *School Health appraisals, the Summer Round-Up,* County Health Unit plans, and correlate wherever *possible with other agencies engaged in Health Edu*cation, to eliminate duplication of efforts.

The tax-payers are usually the parents to whom we

must direct definite helps in the correlation of accurate information concerning the relation between economics, professional ethics, and the teaching of Health Education.

Group effort is often more effective than individual effort in promoting a program, especially where community spirit is strong, or where it needs to be strengthened. I refer especially to the Summer Round-Up Campaign for the pre-school children, which is a project of the National Congress of Parents and Teachers and promoted by the several states. This campaign is endorsed by the American Medical Association and, in Illinois, has the backing of your organization. There is a gap in the care of children between that of the infant and the school child, called the "run-about age." The Summer Round-Up was built for just this aged child. Its name implies its method—to round up the children in the early summer, have their defects discovered by physicians and dentists, record them and have them corrected that they may enter school in the fall term as free from remedial defects as possible. In presenting this plan of Health Education to the parents, we recommend that the examinations be conducted as far as possible in the offices of the family physicians and dentists, with the parent present.

The record cards used in the Summer Round-Up are furnished by the American Medical Association. Health records are important. They comprise the health history of the child. The spirit of co-operation on the part of the medical profession in this project is priceless and must not be underestimated. Leaders of these Summer Round-Up groups are instructed how to proceed with the plans. We have had difficulties at times when overzealous lay persons have brought down criticisms of the profession on our heads, when they have undertaken projects with little or no recognition of authority or consideration of the ethics of the profession, or of the doctors' lack of understanding of organization methods. Through the kind offices and co-operation of your Committee on Education, the path has been far less thorny during the past few years.

McLean County (Mrs. Lancaster's county) has done valuable work. I feel that our best efforts in solving this problem lie within a County Health Unit Plan. It is the natural government unit, and efforts should be correlated to avoid overlapping. A general plan for any County Health Unit should include the prenatal care of mothers and stress the importance of breast feeding of infants.

I have been a member of the Advisory Council of the Child Hygiene Division of the State Department of Public Health for the past five years. This Council is made up of representatives of organized medicine, dentistry, and nursing, the Federation of Women's Clubs, and the Illinois Congress of Parents and Teachers.

Many phases of health education have been produced through this council, comprised of those three professional and two lay organizations. This County Unit Plan is one, and the School Health Appraisal another. This latter is a set of questions that can be graded, as to the conditions of building and grounds, professional health service, and the educational program in the school. The form is a tentative one and has been applied to more than one hundred schools in Illinois with various findings. It is a sort of a measuring stick, and the appraisals have often brought to light important projects that can be remedied by co-operation of parents with the school authorities.

The general plan of work of the Health education division of the Illinois Congress of Parents and Teachers includes campaigns for annual medical and dental examinations, for vaccination against smallpox and immunization against diphtheria.

When we can stand before our groups and state with authority that for 130 years vaccination has been a sure preventive of smallpox; and when the burden and anxiety of that dread disease, diphtheria, can be lifted by immunization, surely the lay groups have a part to play in this great educational movement for Better Health.

A wise Health Education Director of any lay group should be constantly aware of the menace which anti-medical groups wield—whose religious beliefs preclude any support for the simplest basic legislative measures, such as prevention of blindness or for vital research. A wise Health Education Director should know that the administration of health affairs of county and state must be separated from partisan politics; that Health Education must be advocated by influential groups and citizens of generally known integrity and good will, who are free from self-seeking interests; and—we, lay people want the assurance of the friendly understanding of the professional people and public health officials.

I believe that within the past two years we have made great strides in approaching this understanding.

There are at least three professions that are sort of one-man jobs: medicine, dentistry, and the law—where your livelihood and your success depend entirely upon your individual efforts. These professions are backed by neither corporation, nor salary schedule, though the law like the ministry does have some organized support. Perhaps medicine and dentistry, too—if hospitals and schools can be counted. But from a point where an evaluation can be placed on the influence and strength of organization life, your experience is limited. Lay organizations are powerful, and with leadership from professional people, our lay groups can be a great channel to spread this education for better health.

In closing, I would offer these five points which I think are worth striving for:

1. Vigorous, intelligent lay organizations are needed for stability and promotion of the work. 2. A realization of parental responsibility in regard to health. 3. The assurance of a friendly understanding between professional leaders and lay groups. 4. Freedom from partisan politics and self-seeking interests. 5. A program of service, personal and educational, covering periods of five years, to assure familiarity with plans and policies.

So, I hope I have conveyed some impression to you. You may form your own Opinions of their value.

You have Knowledge which we want you to share with us, that we may acquire more wisdom. And

I have the Conviction that we can work together for a better plan of Health Education.

No longer is it enough to follow the old Doctor's prescription:

"I physics, bleeds and sweats 'em,
If they die—why should I cry—
I. Lettsum"

Persistency and courage will be required, but it will be worth it.

Dr. J. F. Maciejewski, La Salle: It is really a conundrum as to what to say about a paper of this kind. After reading it several times it seems to cover the ground so thoroughly that only a few high spots should be touched upon, possibly to enlarge the few points somewhat. The trend of the discussion is evident, it is education.

The general public is quite educated nowadays in matters of public health, probably more so in proportion than an average general practitioner. In spite of this it is the general practitioner who in the long run is responsible for the education of the public. His preaching day in and day out at the bedside and in the sick room carries the weight of the gospel of preventive medicine.

The periodic health examination is still in its infancy and a great deal of work must be done to educate the people in order to accomplish anything at all in this field. It is very pleasing and gratifying to hear the following words, "During the rush of practice I do not believe the average doctor realizes how important an agent he is in the prevention of diseases." The sooner the powers that be are willing to admit the fact that no satisfactory progress can be made in the field of public health without free and sincere cooperation of the family physician, the better and quicker this problem will be solved.

We believe that the people should be immunized against the contagious diseases but the question comes up, who should do the work? Where does the work of the public health department end and the practice of medicine begin?

Economics, a big word. But who is poor and who is not so poor? Where is the line of demarcation? How much work and what kind of work should be done by a health department? If a great deal of the work is done or should be done by a general practitioner, who should pay for it and how much?

In regard to the suggestion of a federal, state, county and a community health department working in close cooperation, immediately a question comes up, will they? And having such departments who is to direct these bodies, doctors of medicine or laymen? Are these to be political organizations? The essayist answers part of these questions by stating that of 2700 health officers 200 are doctors.

And this leads to state medicine and bureaucracy. Unless the medical profession takes more active part in things the socialistic program may come sooner than we expect. The family physician should be the backbone of the public health of this nation.

Dr. A. A. Crooks, Peoria, Illinois: I think that every one who has listened attentively to the presentations of the various essayists contributing to the symposium, will agree, that controversial questions concerning ideals, practices, methods of approach and challenges, opening up new fields of endeavor in health education have answered the queries, statements and challenges of their fellow essayists in such manner that their efforts practically constitute a discussion of the whole.

With such an analysis, may I not present a summation by quoting some of the outstanding expressions from the theses of the participants, believing, as I do, that such repetition will serve best in indelibly fixing in our memory the salient points pertinent to the question.

Quotation from thesis of Dr. Beard.

"A demand for the use of preventive medicine has been thrust upon the doorsteps of the home, school, and college. Parents, teachers, and educators must apply it if they are to make their full contribution to the promotion of health, to the prevention of disease, and are to give their complete cooperation to the succeeding generation in adjusting itself to a civilization ever becoming increasingly complex. They must instruct children and youth how to live as well as how to read, write, and appreciate cultures past and present.

Urbanization of the greater part of the population, the rise of industrialism, and the development of this machine age were possible only because preventive medicine made cities more than a place where people collected to be destroyed by pestilence. The extraordinary development of rapid transportation has increased the hazard from communicable disease beyond the ability of health officials to deal with it without the prompt cooperation of the educated laymen. The increase in application of physical, chemical, biological, and social science to the problems of life, vocation, engineering, and industry and the complexity of modern civilization make a sound knowledge of hygiene and sanitation not only desirable but essential, if an individual is to be able to protect himself and his family and to function as an intelligent citizen.

During the transition of the last six decades, a terrible price has been paid in avoidable disease, suffering, and death because public sentiment gave inadequate support to immunization against smallpox, typhoid fever and diphtheria, delayed the development of sewerage systems, failed to provide safe water supply, has been slow in insisting upon the pasteurization of milk, and has permitted over-crowding, improper housing, and insanitary environment. The knowledge, methods and the technical experts have been available to make living conditions wholesome, but the public has procrastinated because its leaders did not appreciate the opportunity they had to contribute to the health and happiness of their fellow beings. If they had received adequate health education, millions of dollars would have been saved, much suffering would have been avoided, and thousands of untimely deaths prevented.

The great advances in preventive medicine have been made largely in the field of communicable diseases and in the prevention of infant mortality. Progress here

has been largely through the varied and intelligent use of police power by health administrators. It has required relatively a minimum amount of cooperation from the public. Measures for the further reduction of disease and for the increase in the average expectancy of life have to become more and more personal, involving the habits of individuals and the customs of the people. Such is particularly true in the control of cancer, and of the so-called degenerative diseases of the heart, kidneys, and blood vessels. Unless the leaders of the community appreciate this fact, recognize the necessity for the measures advocated by experts in preventive medicine, and are willing to set an example, advancement will be difficult and slow. Unless the citizen is educated sufficiently in the elements of preventive medicine to lead in the promotion of health in his community, it will inevitably be a victim of "the blind leading the blind."

Approximately 35% of the men who matriculate in college have defects which would cause their rejection under the draft. Skeletal defects, defective teeth, poor vision, undeveloped musculature, incorrect posture, heart lesions, deafness and renal disease speak pathetically but eloquently of what might have been avoided if parents had known how to promote and to protect the health of their children.

There is no state in the union in which delinquency, dependency, mental deficiency, and social maladjustment are not becoming problems of such magnitude as to threaten its solvency and prove a menace to racial vitality. This problem of defectiveness gains in magnitude under the stress of an increasingly artificial existence and can only be met by the concerted action of competent specialists and intelligent citizens. Citizens, to act effectively, must have sound knowledge which will cause them to seek expert advice and provide adequate support to bring it to realization. Specialists without public support in a democracy are as futile as a general without an army.

Each year in Illinois there are approximately eight thousand cases of diphtheria and seven hundred and fifty deaths, and more smallpox than in France, Italy, Germany, Japan and New York State combined. The reason for this is that in many communities certain influential persons, often college-trained individuals, oppose so well established methods of prevention as vaccination and immunization against diphtheria. They not only jeopardize their own health and that of their families, but by their attitude and example indirectly condemn children unable to protect themselves to unnecessary illness, crippling, and death. Is it possible for education to meet its obligation to society until it has made a systematic effort to insure itself against such disastrous failures?

In a democracy the epochal scientific discoveries of the last three quarters of a century in the main, cannot be applied without the consent of political units. Obviously, if the leaders of the public do not appreciate the possiblities of science to promote human welfare and are unsympathetic with its application to living, research is in vain, lifting the common level of life is a phantom, and progress is a realization for the distant future.

Our plea today is for sane, scientific, suitable, systematic education in the primary grades, in the secondary schools, and in institutions of higher learning to create and motivate a health consciousness which will prove a means for the development of physical and mental efficiency, the creation of a wholesome attitude of mind, and for cultivation of moral and social qualities. We are advocating instruction which shall be a decisive factor in determining that the healthfulness of environment shall be commensurate with sanitary knowledge. The demand of the hour is for knowledge essential to intelligent participation in enterprises for civic betterment, and to the assumption of the duty of a well informed citizen. The imperative need is an understanding of Hygiene to protect against disease, to guarantee that the individual shall function effectively for society for the longest period possible, and which shall be a safe guard to the individual and the public against the tremendous economic loss and injury to health from fads, frauds, cults, and quackery. The call is for the dissemination of information having a far reaching influence on vocational success and on the promotion of the welfare of those engaging in earning a livelihood. We are urging the use of the best, cheapest, and quickest method to bring to the public the benefits to be derived from the enormous sums being spent by philanthropists and federal, state, and municipal governments for research.

A nation may create a machine age, excel in labor saving devices, be blighted by unemployment, but ultimately recovery will occur. It may establish a record for divorce, embezzlement, and homicide which astounds the world, yet maintain its stability. It may enter a jazz era, emerge with a different moral and religious outlook, and still hope for a better day. If children capable of being strong, well-balanced men and women are being trained to meet the problems of tomorrow, its future is assured. But if the quality of the life of its citizens is undermined by ignorance, bally-hoo, selfishness, and artificiality, neither sky-scrapers, nor cinemas, nor radios, nor armies, nor navies, nor philanthrophy, nor culture can save it from the oblivion of Rome, the decline of Greece, or the decay of Egypt.

Again, our plea is for systematic health education which, when motivated, will provide the leaders of tomorrow with the wholesome environment, physical vigor, mental alertness, and spiritual poise essential to guarantee that the republic established in the heart of North America shall endure."

Quotation from Mr. Richardson.

"In Illinois this public health official sees a vast amount of needless wastage of human life. He sees on the other hand a never-failing source of knowledge, flowing through the channel of the medical and sanitary professions, which if applied properly would convert thousands of lives made barren by preventable sickness into rich human experiences measured in terms of both happiness and economic benefit.

The public health official sees flowing in the channel of medical and sanitary knowledge a vitalizing force which has the power to prevent or modify typhoid fever, diphtheria, smallpox, tuberculosis, rabies, measles, scarlet fever, whooping-cough, malnutrition, syphilis,

gonorrhea, cancer and ill-health in general. Here and there throughout the country these channels of knowledge have been tapped by laterals which have resulted in the spread of this knowledge to whole communities which have succeeded in eradicating completely some diseases and in greatly reducing the prevalence or fatal and disabling character of others.

The value of public health work seems too obvious to warrant discussion. Who, for example, would wish to turn back the calendar to days of yellow fever when strong men turned pale at the mention of that disease and whole communities fled in terror from their homes at the approach of the disease which paralyzed commerce and left destruction in its wake? Who, indeed, would choose to live through the gay nineties when typhoid fever killed its thousands, while diphtheria and tuberculosis killed their tens of thousands? Who would go back to the days before the practice of pasteurization made milk relatively safe for city children? Who would bring back malaria and cholera which public health work has successfully combated? To ask these questions is to answer them. One after another communicable diseases have been brought under control through the practice of what is generally understood as public health work and this success makes possible city life as we find it today.

Of course, public health work and preventive medicine can go forward no faster than the public demand or at least public toleration. The profits from public health work are large, but the activities cost money and the public must pay the bills. Public health instruction must therefore, precede public health work.

The public health official recognizes three outstanding principles which govern the value of public health instruction. First, the magnitude and character of the condition or problem which is to be attacked must be clearly defined. Second, the application of preventive measures must be properly timed. Third, the process of prevention must be economically and scientifically sound.

Once a public health problem is discovered and the means of solution are available, a vast amount of energy, expense and disappointment can be avoided if the control measures are applied at the proper time. Godfrey has shown that some communities have failed to prevent serious outbreaks of diphtheria when as high as 70% of the children over five years of age have been immunized against the disease. The same author has shown that other communities by immunizing no more than 30% of the children under five years old in addition to 50% of the five to nine age group, have produced an immediate and striking decline in the diphtheria rate. Harrison expresses the opinion that the immunization of one child under five years old is equivalent in its influence on the death rate from diphtheria to the immunization of three children of the school age group.

Working in another field, Bower found in a study of 8,216 cases of appendicitis which received care in Philadelphia, that the ailment proved fatal to only one in 39 patients admitted to hospitals for surgical treatment within twenty-four hours after onset of symptoms. Among those admitted after the lapse of 72 hours, however, one in ten failed to recover.

In connection with cancer, the importance of early treatment is even greater.

These illustrations concerning the time element apply to the whole field of preventive medicine. Time is a factor of the greatest importance in the success of any preventive procedure and no less in respect to health than anything else. Sometimes it is measured in hours or days after onset of certain conditions. Always it is involved in matters of health.

Economic and scientific soundness in public health instruction might be taken for granted. There are, however, strong forces at work to the contrary. Vaccination has great opposition which demonstrates liberal endowment with financial resources. Advocates of raw milk are neither idle nor poverty stricken. Commercial interests are quick to appropriate any and every procedure of official or scientific sanction to exploitation for easy money. The far-reaching of these movements manifest themselves daily on every hand.

The various phases of the problems involved in public health work and public health education indicate that there is on the one hand a great need for the practice of preventing medicine. On the other, there is available the knowledge, skill and other facilities which may be applied so as to meet the needs in a way that results in vast benefits from the standpoint of health and economy. The principal shortcoming seems to be facilities for bringing together in a practicable way the need and the remedy. This is exactly the function of official and voluntary public health agencies.

The State public health official believes, therefore, that the building up of efficient local health departments or agencies not only gives promise of great public benefit but is necessary to the reasonably adequate utilization of preventive and curative medicine.

It is the primary function of official health departments to steer public health activities into the right channels at the right time."

Quotation from Dr. Lewis

"As I look back ten years I can see much progress in the education of the physician and the layman. A few outstanding advances come to mind. The deficiency diseases are now quite well worked out and we have a better understanding of the vitamines and their importance in the diet. The value of breast feeding has been generally broadcast and I am sure is saving many babies from illness and death. Now people so generally know about balanced diets that it is unusual to see deficiency diseases even in dispensary patients. I have found that mothers know about orange and tomato juice and why it is given. They now usually ask when to start cod liver oil. They know about sun baths.

Women are coming to us earlier in pregnancy and I believe the average physician is giving better pre-natal care. We periodically check the blood pressure and urine so that we will be informed of the approach of eclampsia. The early diagnosis of syphilis has allowed us to give pre-natal treatment with a consequent prevention of a severe infection in the baby. Preventive medicine is modifying our care of the woman while in

labor. Because of the danger of carrying infection into the birth canal we no longer do vaginal examinations unless forced to and then only under aseptic conditions. We have learned to keep adequately informed about the progress of labor by rectal examinations.

Of recent years a new field of medicine is being successfully investigated. Allergy, a condition that has made the lives of millions of people wretched, is responding to preventive methods. We can now tell people, with a great deal of confidence, that we can prevent hay fever and asthma. Hives, migraine, colon disturbances and certain type of eczema are prevented in many instances by the elimination of the offending substances from the food or surroundings.

In another field we find that the examination of the milk herds for communicable disease and the destruction of infected animals has played a large part in the marked decline of bone and gland tuberculosis. Pasteurization of milk and proper refrigeration of food has been a big factor in the constantly declining infant death rate.

People are beginning to realize the importance of early treatment in disease. Older physicians have been impressed by this different attitude. Formerly effective treatment was hopeless. Now we are often called so early in an illness that diagnosis is difficult. This condition of affairs has even caused a change in medical textbooks. The older so called textbook picture of a disease is now often considered an advanced condition. Recent textbooks stress early signs and symptoms. Ten years ago we were rarely consulted for periodical examinations. They are becoming steadily more frequent.

In the field of immunization we have made progress. Last year the Illinois Department of Public Health had records of 194,972 children who received diphtheria immunization. Ten years ago there were very few such immunizations. Last year there are records of 87,150 smallpox vaccination. Ten years ago, not nearly so many. Infant death rates have steadily decreased, the 1930 rate being 63% of that of 1920. Here prenatal care, better obstetrics and better infant feeding have gradually and progressively improved a formerly bad situation. Preventing medicine and better medical care have helped force the puerperal state rate of 1913 to 65% of the 1920 rate and the tuberculosis rate of 1930 to 62% of the 1920 rate.

There are four outstanding reasons why Public Health Education and its program will never be 100% accepted. First, there are in this state alone thousands of Christian Scientists and Anti-vaccinationists. There are people who have as their general physician, chiropractors, osteopaths, napropaths and so on. Education won't touch these people. But even they are benefited by our program. They drink pure water and milk. They are exposed to fewer contagious diseases because disease prevalence is being reduced.

The second obstacle to public health effectiveness is the lack of information by the medical profession as a whole and their lack of application of the facts that they do know. I believe I am right in saying that the younger doctors are practicing more and better preventive medicine that the older practitioners, largely because of better training along public health lines. Preventive medicine is relatively new in the medical curriculum and the older men practice only the methods they have been fortunate enough to pick up. Because of greater interest in problems of diagnosis and treatment, I believe that relatively few general practitioners meet with this section. For that reason I would suggest that men interested in public health have some place on the programs of the medical and surgical Section.

An important factor that retards public health advance is the lack of information of the layman and his apparent lack of interest when he is informed. It seems that something more than the presentation of the facts is necessary to make people realize the advisability of protecting themselves. In discussing the lack of layman cooperation we must remember that the low economic status of a large number of people causes them to put off preventive measures that they consider they cannot afford. Health protective measures have not been established in the public's mind as a necessity.

Let us turn to the future. That is where we project the ideals that have been aroused by past experiences. What can we do to better advance the philosophy of "Get well and stay well?" I have several suggestions to present for your discussion. From the general physician's standpoint they seem practical. First, we should have active federal, state, county and community health departments working in close cooperation. Figuratively they should represent the power stations from which radiate the preventive medicine and health activities. In my opinion the federal and state departments are doing a good job. There is room for improvement in the county and community organizations.

The effectiveness of the public health program could be increased a great deal by extending education along these lines to the children now in High school and in the upper grades. It seems reasonable to me that some knowledge of the methods of keeping well might be as important to the future welfare and happiness of the individual as appreciation of literature, for instance. Few High school graduates understand the general physiologic processes that take place in their bodies. They are only recently being taught how to select a proper diet and they know very little about the bodies defense against disease. The individual should be taught his part in the general health program of the community. He does not usually get such instruction at home. Quarantine is still considered a form of imprisonment rather than a means of protecting others. A discussion of the possibilities of disease control and prevention would cause a more intelligent understanding of public health activities. For an individual to be happy and useful he must be well. Doesn't it seem reasonable that he should be taught how to keep in the condition of happiness and usefulness?

If we plan to extend our education of the laity we must be sure that the physicians they consult about health problems are interested. Education of the laity requires that physicians be able to answer and participate in a discussion of their questions.

There are several fields of preventive medicine that still challenge us. Venereal disease incidence remains

much too high. Theoretically, the curing of each case that presents itself and the clearing of the source of the infection should in a short time make the incidence small. Actually the cases do not all stay under treatment until cured and the source is rarely brought under treatment. The number of rabid animals is increasing in the State and we must take some definite preventive action. Trachoma and gonorrhea neonatorum are not under control. It is my belief that soon an arthritic will be considered as a sanatorium case as the tuberculous now is and that the public health agencies will see that indigent cases are supported there as now obtains for the tuberculous. Mental disease or inadequacy fills 50% of the hospital beds of the country yet we are apparently only recently realizing that mental hygiene might prevent some of this terrible loss of happiness and usefulness. A large part of general practice deals with treating emotionally and mentally disturbed individuals. We realize the need for prevention but haven't done much about it.

The entire public health program of education and prevention needs the cooperation of the physician. They can and should be induced to assume the major responsibility of the program. General broadcast by radio, through literature, the press, advertisements, and all the devices available, will not serve to answer intimate personal questions on health and on disease prevention. The private physician should eventually fit in here most effectively.

There has been definite advance in public health education. This group of public health officials should be active in getting the general physicians and layman to do their part in the job and the future will show still greater progress."

Quotation from Mrs. Lancaster.

"We are told education is the sum total of those experiences which modify conduct; its aims include worthy home and community membership; and that this end is reached by response to selected stimuli. With health education as with all education someone must recognize the aim, supply the selected stimuli, and furnish the materials and methods of reaching the goal.

The public is beginning to develop a health consciousness. We as layman are beginning to recognize a difference between negative and positive health. Furthermore, we recognize a distinction between individual and community health problems.

Unfortunately our medical profession has been too busy building its own clientele, earning its own bread and butter, caring for its own several patients, passing the layman by with only momentary directions and advice unless very sick, to supply any of the "selected stimuli" or in other words to teach the public the meaning of positive rather than negative health.

All education comes slowly and with a cost. We who have been aroused are facing with you doctors, nurses and health officers the question of furnishing the selected stimuli for the others. Can the human desire to make our bodies carry us and our children as far as we are physical and mental capable of going turn the attention of the public to this problem of health? Or is the tax-payer who is "money conscious" going to become "health conscious" because he recognizes the law of individual differences.

But the tax-payer is still wasting his money when a child goes to go to school physically unfit to carry home what is offered him there, or when he, an adult muffs a business deal because he was "so tired", or enters a sanatorium because his body is unfit.

The tax-payer should convince himself and his family physician it is better to have a complete examination periodically as he does his dental examination even though he feels well rather than wait until illness or "that tired feeling" forecasts a bank account devastating illness or a tax supported rest in a county sanatorium. In connection with the last circumstance a well developed and enforced health and sanitary education could well save much money that is now used in rehabilitation.

The struggle of the individual to produce a livelihood occupies a small and decreasing fraction of his time and energy. This permits and perhaps necessitates a changed viewpoint in regards to the elements of living. In this new viewpoint constructive, positive health education becomes more and more important, necessitating a change or modification of the view of the professional man, including the doctor. A demand for education is beginning to be evidenced by the public. This demand will grow if the selected stimuli are supplied. There are enough organizations interested in the problem. The State is anxious to foster and encourage. It is up to those most thoroughly health conscious to lead the others to a health education commensurate with worthy home and community membership. In a word, to select and supply the stimuli."

Quotation from Sup't. McManus

A few generations ago schools did not concern themselves with the health of the pupils. That was a matter which was left solely to the parents until the prevalence of a disease had reached the proportion of an epidemic. Then the community assumed control and dischargd the duties pertaining to health indifferently well. During the last twenty years the schools' responsibility has undergone a decided change. Schools are now doing everything, within reason, which their finances will permit, to safeguard the life and health of the pupils. They are now trying to turn out healthy, happy children, well started on the path of successful adaptation to their environment and to the rules of civilized life. Education, in its broader sense includes instruction as to proper diet, proper conduct, proper use of one's mind, body and emotions to the end that a healthy body, a healthy mind and healthy morals will be adequately built up and maintained.

The schools are interested in the physical well being of the children from the standpoint of efficiency and attendance. The advent of the public health movement has greatly reduced the number of absentees and the efficiency record of those in attendance has been greatly enhanced. The annual scourge of

contagious diseases is now practically eliminated. The close cooperation of the teachers and school officials with the Health department enables the physician and nurses to detect the contagious disease in its incipiency, thereby enabling them to isolate such children and prevent the spread of the germ. The examination of pre-school children by physicians to detect correctable defects now throws some of the burden on the parents, to see that those defects are corrected before the child enters school.

While a complete plan of Health Education resolves itself into three distinct, but closely related phases, health service, physical training and recreation; it is with the first of these that we are particularly concerned today. A Department of Health is necessary to stimulate health activities and to speak authoritatively, through its physician, on matters pertaining to the health of the community and especially that of the children. It should and does plan a program of health, formulates rules of right living, and constructs a workable syllabus for the inspiration and guidance of the teachers. However, the Superintendent and teachers must help to put it into effect. It is the class room teacher, cooperating with the parents, who does the actual effective work in health education. A knowledge of virtues does not insure their practice; neither does a knowledge of health habits or rules insure their observance. Teachers must do everything in their power to induce the pupils to practice the rules of right living and to thoroughly master those health habits which are designed to protect their health and prolong their lives.

Prevention is the most effective health work that can be done for the welfare of the community. It is really a composite problem of the home, the school, and the community and must be solved through their cooperation. They must make use of what science has found out for the prevention of sickness and the spread of disease, and every thing possible to get the children and parents in the right attitude toward health education. When fully awake to the dangers of infection, parents and pupils will work, with teachers and physicians, in an effort to ward off disease. Teachers must work with the health department to get the idea across to the parents and children, that certain diseases are caused by germs, which may, by precaution, be prevented from getting into the system.

Before teachers can do very effective work in health education, they should have a knowledge of what science has to offer for the development and maintenance of health. They should know the rules of health and have formed the habit of right living. Teachers' colleges should make health education a major subject, and then give to every prospective teacher a workable knowledge of such health rules and health habits as should be taught to pupils in elementary schools. In the meantime, through the influence and efficient work of health departments, teachers may and are being taught to realize the importance of health education and induced to master much of the knowledge pertaining thereto. They are becoming better acquainted with correct habits of living and instinctively help their pupils to set up and observe such habits.

Until our teaching force has more completely mastered the necessary scientific information for health education; until they practice rules of health habitually, and until instruction in health education can be done instinctively, a special period on the program must be set aside for instruction and drill on health education. I do not mean to infer that the time will ever come when incidental instruction on health will suffice, but I do mean to say that we can never do effective health work in any one period a day scheme. Much of the health instruction should be incidental and spread over the entire day. Now, the teacher must see that the pupils get the necessary correct information during that period, either from the text or through a series of talks. The teacher must see to it that proper health habits are firmly established by appropriate practices. To do this, she will have to secure, so far as possible, the good will of the pupils and the cooperation of the parents.

Teachers need never be so busy that they cannot spare the time to inspect the hands, the faces and eyes of the pupils for cleanliness and for signs of communicable disease. By giving close attention to all common colds and coughs, teachers are able to detect the sign before the cold is actually developed. By regarding every cold as a possible beginning of contagious disease, some children are required to remain at home a few days, thus insuring a speedy recovery and preventing the possible development and spread of disease germs. Experience has taught us that children having severe colds or coughs can do very little effective work in school. But if such children remain home a few days, a complete recovery will be effected and the child will be just as far advanced, in his school work, at the end of the week as if he had remained in school every day, hampered with the prolonged cough or cold.

A child's conduct, character, and mental attitude is acquired very largely from the environment in which he lives. To bring about the necessary change in attitude and mode of living, the teacher must not only be sure of her facts, be concise in her statements, but she must be very tactful so as not to reflect discredit on the parents and the home life of the children. It is more what a teacher is, than what she says. She should exemplify health in her daily work thus encouraging the pupils to attain the good health standard which she has set. Many of the parents are poorly informed on such matters. Even some educated, well meaning parents have very erroneous ideas as to what their children should eat, as to what they should wear, and also the amount of sleep and rest necessary for healthy growth and development. While we cannot hope to have a dietitian in every school, we are encouraged to hope that most teachers will have sufficient knowledge of the proper kind, and the several varities of food that children should eat and have at least an elementary knowledge of how such foods should be prepared. If the teacher is tactful and gives out such information, at the right time, couched in language easily understood by the pupils, the parents

will be gradually educated and influenced through their children.

Much effective work is being done in school today in the promotion of health by the school nurse, who goes to the homes, or perhaps deals with the pupils individually, and sets up, through intelligent advice and supervision, habits of good living.

It may be entirely too ambitious, yet I like to hope that the time may come when according to Professor Sutton, public health authorities, cooperating with the schools, shall succeed in instilling into the minds and hearts of the rising generation the idea that they are the bearers of the life and health of the race. They must be led to realize that since they are but the temporary bearers of the life stream they must guard it with the greatest care, so that they may enjoy life to the utmost and pass it on unimpaired to the next generation.

SOME OBSERVATIONS ABOUT THE TREATMENT OF UTERINE FIBROIDS AND THE BLEEDING OF THE MENOPAUSE*

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This paper was prepared, after a number of years of experience in the field of x-ray therapy, because it seemed to me that the x-ray treatment of bleeding of the menopause and of fibroid tumors gave excellent results. A careful check of our cases, some two hundred in number, confirmed these impressions. The results in carefully diagnosed cases are such as are obtained but rarely in any field of medicine. Nothing said in this paper should change the fact, that x-ray treatment of these cases must not be attempted until a most careful gynecological examination, using every method at one's command, has assured one that the diagnosis is correct.

In any article on the treatment of these conditions, certain contraindications are sure to be found. Inflammation of the adnexa is always used, as are the size of the tumor, sarcomatous degeneration of the myomata, and carcinoma of the body in both menopausal bleeding, post-menopausal bleeding and in the myomata. Each of these will be taken up later. May I say that with some qualifications, which I will make, none of these need be considered as a definite contraindication in the average routine of cases.

We will first take up what surgery, the accepted treatment in America, has to offer. In tumors, both carcinomata and fibromata, it removes the disease; in the bleeding case it removes the symptoms and preserves the ovaries for future function. It assures the patient, except in malignancy of the body of the uterus, she will be well and in the latter type 50 to 60 per cent. will be cured. This surely appears at first glance to be a panacea, but what are the costs?

Discussions are still in progress where no malignancy is known to be present as to whether a total or a sub-total hysterectomy should be done. I have no doubt that in most of the larger hospitals either a total hysterectomy or some form of operation that removes the mucosa of the cervix is done, but in many hospitals, in the hands of many operators, these operations are not done because they carry a high mortality. Published statistics of some of the larger hospitals, such as St. Luke's in New York City, quoted by Wood, give an operative mortality of 1.5 per cent in 1,000 cases. The Mayo Clinic reports for 1931, where 473 cases are reported, 287 total and 186 sub-total with 11 deaths, or 2.3 per cent mortality. Many published reports established these figures as correct for the best surgeons, but I have knowledge of a number of good institutions, where it runs as high as 5 per cent. So we will grant that surgery removes the disease, but at a conservative mortality of over 3 per cent.

Now, if, as I believe, in many places because of various reasons, the cervix is left in, we have to add an additional mortality, the amount of which I know no way to compute, as I could find no collected statistics. This is the mortality that follows malignant degeneration of the retained cervix. In the last 150 cases of carcinoma of the cervix seen by me, in which the records are complete, 11.8 per cent were in retained cervices. You may say, that this is due to poor surgery, but these cases are from a number of different men in an average community. Five of these cases did develop the disease within the first year, showing lack of careful diagnosis, but the remainder of the cases show periods varying from two to six years. I admit that the percentage of carcinoma in this series is very high, probably due to the small number of cases, but still it seems

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to be a factor, which should not be neglected when any form of treatment is considered. Carcinoma of the retained cervix is almost always fatal.

Another factor is sexual disfunction. Few surgeons but have had at some time or other women under fifty years of age, operated upon, a complete hysterectomy but without oophorectomy done, the sexual function active, with inability because of mechanical factors, to satisfy these desires. In other cases it is the husband, who complains. This subject has not been given enough consideration in the literature. It is an important one. Careful questioning about the sexual function in patients x-rayed elicits, that there is little change after the treatment. The sexual organs undergo the normal atrophy of old age, the process does not seem to be hastened, so that several years of gradual change occur. While this may not be ideal, it is better than the results obtained when these functions are suddenly stopped by surgery. There are enough neuresthenic patients about now. This class should not be augmented.

Now for a few of the more often mentioned contraindications to x-ray. First, pelvic inflammatory disease. This was long considered as a definite contraindicant, but of late years voluminous literature about the treatment of inflammation with the x-ray, mostly in the foreign journals, has appeared.

Tamdarow, in an article on "The Treatment of Fibroid Tumors" in Strahlentherapie, gives pelvic inflammatory disease as one of the indications and says this condition disappears along with the tumor. Other European authors mention it, and Desjardins, in *The Journal A. M. A.*, 1931, reviews the entire subject of x-ray treatment of inflammation. He refers to Gambarow, who treated 123 cases of adnexal disease with good results. Desjardins admits he is not sure of the mode of action of x-ray, but thinks it is on the lymphocytic infiltration. He adds that after careful observation, he has never seen an inflammatory case made worse by treatment. This has been our experience with cases of chronic inflammatory disease. I have never treated, nor have I seen any reference in the literature to the treatment of acute conditions. It is my opinion that part of the good effects are due to a gradual reduction of the blood supply, both from the direct effect of the ray upon the infected tissue and the results of the effect upon the ovary. These things are particularly important to know because it is in these chronically infected, adherent cases that the post-operative accidents occur.

The matter of very large tumors is most always mentioned in the literature. Our experience has been, and I am sure that it has been the experience of all radiologists, that mere size is no contraindication, as many times these tumors respond better than the small, more dense tumors. If the tumor contains calcified areas, these areas may be demonstrated roentgenologically, and, of course, surgery will have to be used, but in the greater number of cases this contraindication will not be present and therefore size has been disregarded in practice by most men, who treat these cases with satisfactory results.

Another contraindication and the one most frequently mentioned, is sarcomatous change of the myomata. There is great divergence of opinion in the literature as to the frequency of these cases. Lynch showed 4.6 per cent present in 683 cases. Kaufmann in his text-book on pathology says it is most common in the submucous type and quotes Evans as having found it in 1.8 per cent of 4,000 operative cases. Wood, after examining 1,000 cases, gives no percentage, but says it is rare.

The following is a quotation from Corscaden and Stout, 1929: "A very extensive resume of this whole period was made by Piquard in 1905. Between the years 1857 and 1905 reports on 127 cases of sarcomatous degeneration, including 5 of his own. Of these the diagnosis was based upon morphological evidence alone in 103. Of the remainder, 4 must be discarded because of doubt as to whether they are sarcomata or carcinomata. Eight were found to have invaded surrounding structures, 15 recurred after removal and in 8 there was metastasis. Therefore in this forty-eight year period, a compilation covering the literature of eight countries, contains records of 31 proved malignant sarcomata of the uterus.

Four years later Kelly and Cullen, 1909, published another elaborate investigation. Among over 1,400 myomata of the uterus, there were 17 which they considered showing morphological evidence of being sarcomata.

An analysis of these reports shows that there was proof of malignancy in but 7; i. e., 2 recurred locally after hysterectomy, 3 showed apparent invasion of the neighboring tissues and 2 had distant metastases. On the other hand, a few of the 10 cases for which there exists nothing but morphological evidence that they were sarcomata, have remained well several years after operation.

In 1920 the results at the Mayo Clinic were studied by Evans. He found that from 1906 to 1918 inclusive, a period of thirteen and a quarter years, there had been 4,000 operations for uterine fibromata. Seventy-two of these had been previously reported as being suspicious or malignant, but only 11 proved to be so by recurring locally and invading the peritoneal cavity. Using his criterion only 13 cases were histologically malignant. This gives us a figure of 0.39 per cent of all fibroids removed by operation, which are malignant. This corresponds very closely to the figure 0.5 per cent obtained by Kelly and Cullen of proved malignant neoplasms among the fibromyomata.

A few years ago it began to be the fashion for pathologists and gynecologists to examine series of fibromyomata removed at operation for evidence of sarcomatous degeneration and the results were startling. Warner, 1917, and Miller, 1913, found that about 2 per cent of all myomatous uteri showed sarcoma. Geist, 1914, while examining 250 myomata found that 4.8 per cent of them showed sarcomatous change. Spencer, in discussing a presentation of 2 cases of sarcoma of the uterus by Andrews, 1921, stated that he had found sarcoma in 6 per cent of all cases of myoma and that Bumm put the figure as high as 12 per cent. Because of this he now did total hysterectomy for myomata. All of these reports are based upon morphological changes and in few apparently has an attempt been made to find out what happened to the patient after she left the hospital.

If the observations of these writers are correct, then a considerable number of women who have retained myomatous uteri are afflicted with the disease, sarcoma of the uterus. If this is a malignant neoplasm, we should be able to find autopsy records of such cases. In Bellevue Hospital, New York City, there are none recorded among the autopsy protocols, while there are only 3 cases, reported in this paper, at Presbyterian Hospital, New York. At the Boston City Hospital in 1917 there was recorded only 1 case, which was studied by Gardner. He noted that of 827 myomas examined at the hospital, 24 were histologically malignant, but this was the only one in which the growth had metastasized. It may be argued that hysterectomy has cured many of these women, but if this is true, why have we such a dearth of autopsy records of women dying of sarcoma of the uterus in the days before hysterectomy for fibroma became such a common practice.

One cannot escape the impression that although an appreciable number of uteri may be found in which histological changes have occurred, exactly similar to or closely resembling the changes found in proved malignant neoplasm arising in fibromyomata, only a small proportion of these are actually malignant themselves. One cannot say what the proportion of malignant neoplasms among histological sarcomata of the uterus is, because seemingly no one has seen enough cases and allowed them sufficient length of time. Our impression is that the figures of Evans are very close to the truth and that only about two-fifths of 1 per cent of all fibromata are malignant."

The reason for these divergent opinions, of course, is not hard to find. It is in the difficulty of determining from the cell morphology, when malignancy has developed. Ewing in his textbook makes the simple statement that diagnosis is difficult, so, with the number somewhere about 0.5 per cent of the observed cases and the statement of Ewing that 50 per cent of all women over fifty years of age have these tumors, the facts bear out our experience, that clinical sarcoma of the uterus is a rare disease. Nevertheless it should be thought of and a rapidly growing tumor should be viewed with suspicion, but sarcoma of the uterus is not an indication for the use of surgery in the great majority of cases.

The last of the most usual contraindications to the x-ray treatment of uterine myomata is its association with carcinoma of the body, with the variation of opinion of frequency of myoma ranging from 20 per cent in some authors to 50 per cent in others. The coincidence of the two conditions of necessity would be strik-

ing. I have seen no report of statistics of a series of myomata operated upon, which gives the number of cases of carcinoma of the body found. Its frequency with regard to the entire series cannot be estimated. Of the many thousand cases reported, following the roentgen ray treatment, there are also no figures to tell us how many afterwards developed this disease.

There are a number of articles analyzing series of cases of carcinoma of the uterus with the relative frequency of carcinoma of the body to carcinoma of the cervix and here again the variation is marked. Stacy of the Mayo Clinic says carcinoma of the fundus and carcinoma of the cervix appeared in a ratio of 1 to 3.4 in a series of 855 cases of carcinoma of the uterus, reported by Maley in 1909. Cullen reported carcinoma of the fundus in 25 per cent of 176 cases of carcinoma of the uterus and Graves 22 per cent in 555 cases. In most of the early text-books it states that carcinoma occurred in the cervix eight or ten times as commonly as in the fundus. Keene and Kimbrough found it in 1.6 per cent of 254 cases. Carcinoma of the fundus has been considered a disease of the post menopausal life, but as in cases of carcinoma elsewhere in the body, recent studies show a greater incidence in younger people than was shown in earlier reports. In an anlysis of cases at the Mayo Clinic, between 1907 and 1924, 21 per cent of women with carcinoma of the body were below fifty years of age and 10 per cent were below forty-five years of age.

Curtis F. Burnham says: "The ratio between two groups of carcinoma of the cervix and carcinoma of the body in our records is 1 to 14. Old age is a predisposing cause. Patients with uterine body cancer are much older on the average than those afflicted with cervical, ovarian or other gynecological carcinomata. In 165 patients in this group treated in the clinic of Howard A. Kelly Hospital the average was fifty-seven years. In the literature there occurs frequently the statement that cancer of the uterus is much more frequent in women with fibroid tumors and those suffering from sterility and those who are unmarried. Without accurate information as to the percentage of fibroids in all women, of sterility in all married women and of spinsterhood, a small group of cases is of limited value in throwing light on the importance of these factors. However, my impression is that they have little, if any etiological significance."

D. C. Norris and Voit in 115 cases observed this complication in 21 per cent. Uterine fibromata are much commoner in negroes than in whites, but apparently body cancers are much rarer. The reverse should be the case if fibroids cause or favor cancer. Sterility does seem to be a predisposing cause, or at least an associated condition. In 127 records this question was clearly taken up and there were 58 women who had had children and 69 who had had none. In these women there was, therefore, 55 per cent sterility. All of them had been married for years. Most of those who had had children were multipara, the largest number of children in one case was 16.

With a divergence of opinion of from less than 1 in 4 of one series, to 1 in 14 in another, it is hard to arrive at definite conclusions. In our own series of 200 cases of fibroid tumors and bleeding, carcinoma of the body has been present clinically in only 2 cases. One case was curreted by a competent surgeon and the scrapings examined with a negative diagnosis. Bleeding in women, with or without myomata, after the menopause, should always be regarded with suspicion and one should consider it malignant until proven otherwise. Careful clinical examination with diagnostic curretage will help us from the bad results that follow delay in these cases. However its relative rarity, the ability to diagnose it preoperatively makes me feel that it is not an important consideration in most of these cases.

This paper is based entirely upon the use of x-ray in the treatment of these conditions. The intrauterine use of radium is still contraindicated in several of these conditions. The type of radiation used in these cases is a single series of high voltage x-ray, 200 kilovolts, 1 millimeter copper at 50 centimeters distance, with approximately two-thirds erythema dose given in three sittings, one sitting every other day. Four areas are used, one anterior, one posterior and two laterally, the size of the fields being 15 by 15 centimeters. There has been in our experience no occasion to repeat

this dose to cause a complete cessation of menstruation. There is little or no effect upon the skin. In some cases the pubic hair disappears, but soon returns. The fields are so distributed that the radiation includes the entire pelvis. Many times I have heard it described as being absolutely necessary to use radium for a quick cessation of the bleeding. This is not always necessary. I have seen patients with severe hemorrhage and marked anemia, cease to bleed following the application of one single dose of this type of Roentgen Ray therapy. Following the above treatments, the patient may menstruate once at the normal time for the next period and there may be a small amount of bleeding at second period. It is unusual to have more than this. The results have been extremely favorable. This treatment can be carried on in most cases in an ambulatory manner, it requires no hospitalization unless the previous condition of the patient demands it. The menorrhagia is usually controlled within a few days and the patient begins to gain in strength and weight. The percentage of disappearance of the tumors has been very high. It is, however, useless to expect a tumor of large size or of a marked consistency to disappear within a very short time. There is almost immediate alleviation of the symptoms, but the tumor itself may remain for some time. Some of these tumors have taken from six to nine months to entirely disappear. Occasionally, a tumor, not very large or of markedly hard consistency will not entirely disappear, but the patient's symptoms are alleviated and they are no worse off than many patients with fibroid tumors, small in size, who have never known the presence of the tumor. Careful follow up of these cases should be the rule. Continuation of a uterine discharge, return of bleeding, are symptoms that should not be neglected and if subsequent surgery is needed, the patient will be in better general condition to stand the operative procedure, and if malignancy is present, they will have received a good preoperative radiation, which will have a beneficial effect on the prognosis of the case.

BIBLIOGRAPHY

Corscaden and Stout: Amer. Jour. of Roentgenology and Radium Therapy, 1929, XXI, 155-167.
Desjardins, A. U.: J. A. M. A., 96, 6, 401-408.
Evans, N.: Surg. Gyn., and Obst., 1920, XXX, 225-239.
Gambarow, G.: Strahlentherapie, 1927, 26, 698-705.
Kaufmann: Text-Book of Pathology.
Keene and Kimbrough: Amer. Jour. of Obst. and Gyn., 1930, XX, 198.
Lynch, Frank W.: J. A. M. A., 1930, 94, 156.
Mayo Clinic, Staff Meetings of the, 1932, March.
Tamdarow: Strahlentherapie, 1929, 22, 121-130.
Wood, Carter: J. A. M. A., 1930, 94, 601-606.

DISCUSSION

Dr. Harold Swanberg, Quincy: There is very little that I can add to Dr. Murphy's splendid presentation except to confirm practically everything that he has said.

We have been treating uterine fibroids with x-ray and radium over a period of fifteen years and our experience has been practically identical with that of Dr. Murphy. I am strongly of the opinion that the general profession does not appreciate what can be done with radiologic methods in the control of these cases. Certainly the average patient would greatly prefer not to undergo an operation if she can have some assurance that she can be relieved of her symptoms without surgery.

I think that the tendency of physicians to immediately tell patients that nothing can be done except a surgical operation is one of the things that drives many patients into the hands of quacks. Here in organized medicine we have a method at our command by which we can give these patients a great deal of relief without surgery and I think that we should utilize it.

Just as in any other branch of medicine this treatment requires skill in its administration, because x-ray therapy, although painless, is not a Christian Science method of treatment. In utilizing x-ray or radium in any form, you are utilizing a very powerful agent and it must be directed carefully, specifically and with a definite purpose.

I do think that many of these cases, especially the smaller forms of fibroids, can be treated successfully with radium. Dr. Murphy did not mention this because he was speaking upon the efficacy of the x-ray alone.

Dr. John Murphy, Toledo, Ohio (Closing discussion): I just want to stress two things. You cannot do this work unless you have a careful diagnosis. I am not trying to discard the surgical methods. Surgery is imperative in some cases, the method of choice in others, but it is not the only method, nor always the best method. Another thing is careful follow-up. The tendency in some places is to consider the roentgenologist just as a roentgenologist. You must remain a physician. You must follow up the patient and you must know gynecology. If you do these things, your results will be good.

This is a great age of convenience when one gets his food from cans, sermons by radio, and babies from foundling asylums.—*Ohio State Journal.*

Young Harley Glace thought he would race
The Choo-Choo for a thrill.
For quite a space he set the pace;
He met the Choo-Choo face to face—
And sleeps on yonder hill!

Salome, the first woman to discover the relation between gauze and effect.—*Blue Baboon.*

EXOPHTHALMIC GOITER IN CHILDREN#

LINDON SEED, M.D. AND HENRY G. PONCHER, M.D.*
CHICAGO

True exophthalmic goiter is rare in children below the usual age limit of 12.[1] There exists however, a group which clinically simulates this disorder and to which is applied the terms hyperthyroidism and abortive types of Graves' disease. Patients of this type are often cited as cases of exophthalmic goiter that respond to medical treatment. The condition is found mostly in girls between the ages of 8 to 15. These children are nervous, emotionally unstable, complain of headache and cardiac palpitation on exertion. They are usually above normal height for their age, have slightly enlarged thyroids, rapid heart rate, slight staring expression of the eyes and their hands are constantly moist. These cases for the purposes of reference will be termed the functional group. Should this group be classed as true exophthalmic goiter the incidence of the disease in children would be more common than previously recognized. The diagnosis of exophthalmic goiter from the surgeon's point of view concerns itself primarily with the question whether the enlargement of the gland is purely a local affection or whether it is producing a toxic constitutional state. In other words, are we dealing with a functional disorder incident to puberty and its attendant physiologic stress or a definite hyperthyroidism associated with thyroid hyperplasia?

In this study two types of cases were observed. They were distributed in the following age groups:

EXOPHTHALMIC GOITER		FUNCTIONAL GROUP	
Age	Number	Age	Number
11	1	9	2
12	3	10	2
13	2	11	4
14	4	12	4
15	2	13	4
16	4		

The 16 cases of exophthalmic goiter in children reported were selected from 631 consecutive cases of exophthalmic goiter seen during the past few years. In some of the other series reported in the literature Sattler[2] reported the largest. In 3,477 cases of exophthalmic goitre he found 184 children of the age of 15 or under. Helmholz[1] reported 30 cases in 3,432 patients with the disease and in a recent report by Greene and Mora[1] there were 26 cases in children out of 1,200 cases of exophthalmic goiter observed. It is significant to note that in the two most recent reports by Helmholz and Greene and Mora only 19 cases were below the age of 12 out of a total of 56 children with the disease.

The diagnosis of simple goiter is rarely difficult in the patient in whom thyroid enlargement is the sole clinical feature. In children between the ages of 8 to 15, cases are encountered who exhibit symptoms with thyroid enlargement. Correct diagnosis is of paramount importance as statistics show that the peak of incidence of exophthalmic goiter in children also occurs at puberty. The symptoms of exophthalmic goiter in children do not differ materially from those seen in adults. For diagnostic consideration they may be grouped under the following six headings:

1. Persistent tachycardia with elevated blood pressure and pulse pressure.
2. Nervousness and tremor.
3. Enlargement of Thyroid (with a local bruit).
4. Exophthalmos.
5. Loss of weight and strength in the presence of a good appetite.
6. Increased basal metabolic rate.

All of these symptoms, with the exception of exophthalmos can occur in other diseases,—chorea, tuberculosis, rheumatic heart disease and functional disturbances. It is only after a careful consideration of the character of these symptoms that one can arrive at a conclusion.

1. Tachycardia with the qualifications that it be persistent and associated with an increased pulse pressure is quite charateristic in the true case of exophthalmic goiter. The pulse rate in children is usually extremely rapid. In fact, there is considerable doubt if one is justified in making a diagnosis of exophthalmic goiter in a child when, without treatment, the pulse rate is under 100 per minute. It will more likely to be above 130 and remain persistently rapid day in and day out. The systolic pressure is usually elevated and even in children it is rare to find a systolic blood pressure below 120. The pulse pressure, which is roughly proportional to volume output of the heart

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*From the Departments of Surgery and Pediatrics, College of Medicine, University of Illinois.

per beat, is increased. This accounts for the forceful pounding of the heart and violent pulsation of the carotid vessels. Systolic murmurs are often encountered. In one case there was a diagnosis of organic disease, and in two others an erroneous diagnosis was made of a concomitant valvular disease. In the functional group these symptoms were present but in a milder form. This can be seen from the following figures of the two groups in which average readings of the children with exophthalmic goiter are compared with the average highest single finding of the functional group:

1. Exophthalmic goiter (16 cases)
   Pulse Rate.....134 per minute
   Blood Pressure.....135/62
2. Functional Group (16 cases)
   Pulse Rate.....116
   Blood Pressure.....113/60

From these facts we feel justified in making the assertion that a child with a systolic blood pressure under 120 mm. or with a pulse rate under 120 per minute is not likely to have an exophthalmic goiter.

2. Nervousness is very pronounced, especially of the objective type, in both groups of cases. Those with exophthalmic goiter however show this symptom to a marked degree. In these patients it appears suddenly along with other symptoms in a previously normal child. The child laughs, cries or becomes frightened on little provocation; he is seldom quiet, moves about rapidly and frequently. The restlessness is so marked and the movements are so numerous that in some of the patients a diagnosis of chorea had been made. In the functional group nervousness was likewise a constant complaint and a number evidenced a similar type of restless activity. These children, however, gave an almost life-time history of nervous instability whose reactions varied from day to day and were definitely influenced by external factors. The presence of tremor is of little diagnostic value as a single symptom. It was present in both types of cases although possibly more marked and more constant in the patients with exophthalmic goiter. Although the symptom has little differential value as an isolated manifestation nervous overactivity is so pronounced in children that one can be reasonably sure that an objectively quiet, peaceful child does not have exophthalmic goiter.

3. The presence of a goiter in a child from this region is of little aid in the differential diagnosis.[3] Since, however, a palpable goiter is one of the cardinal findings of exophthalmic goiter, occuring in about 90% of cases, one should be hesitant in making such a diagnosis in the absence of a definite enlargement of the thyroid gland. In all of our cases of exophthalmic goiter there was a distinctly palpable, firm, gland. In the functional group an enlarged thyroid was likewise a constant finding. Sometimes the character of the gland is of assistance. A very soft diffusely enlarged thyroid, the type that was seen in the functional group is usually non-toxic; a gland which is firm or hard with the characteristic granular uneven surface is usually hyperplastic and toxic.

A bruit over the superior poles providing one is sure it is not a carotid bruit or a venous hum is helpful. In the 16 cases with exophthalmic goiter, 12 had a definite bruit. In the Helmholz series 70% had bruits. The incidence of this sign is much higher than one finds in adults. In the functional group there was only one patient with a bruit and this was questionable.

The administration of Lugol's solution to a patient with exophthalmic goiter not infrequently causes the gland to increase in size and firmness. As far as we can learn this phenomenon occurs only in the gland of exophthalmic goiter. In one of our cases the production of a larger and much harder thyroid in the third week of lugolization was one of the deciding factors in the diagnosis. In other cases it was of considerable value.

To be of diagnostic value the general improvement under Lugol's solution must occur within a week to ten days. Under continued observation the patient with exophthalmic goiter gives definite evidence of the diagnosis while the child in the functional group runs more or less of an uneven clinical course until puberty is established.

4. Although exophthalmos may exist in rare instances without thyrotoxicosis one is more or less forced to accept the dictum that a patient with bilateral exophthalmos has exophthlamic goiter. The greatest difficulty has been in determining when exophthalmos actually exists. Differences of opinion on this point are very common. The various eye signs are of little

value in the questionable cases. The stare usually precedes the protrusion and there is but one constant characteristic of the stare. That is the elevation and retraction of the upper lid. Normally the upper lid lies below the level of the iris. When a definite stare is present the lid is retracted so that the white sclera shows between it and the iris. In our 16 cases with exophthalmic goiter, 13 had definite exophthalmos. This is a higher percentage than seen in adults but compares with the incidence in children as quoted by Greene and Mora and Helmholz in which exophthalmos or stare occurred in 80% of their cases. It is so frequent a symptom that we are of the opinion that the diagnosis of an exophthalmic goiter in a child is doubtful in its absence. In the functional group of cases a staring expression of the eyes may be mistaken for the classical sign.

5. Loss of weight and strength can occur in many diseases but in only two is it associated with a normal or increased appetite, namely, diabetes and exophthalmic goiter. In none of our cases of exophthalmic goiter was there a loss of appetite. In 10 cases the appetite was increased and most of the children could not be appeased despite a large food intake. In 5 cases the weight loss averaged 20.6 pounds in 2 to 3 months in spite of a good appetite, a finding which itself is sufficient to suggest the diagnosis. The other cases of exophthalmic goiter had only a few pounds weight loss and in 2 cases there was a gain in weight.

The latter event does not occur, however, unless the food intake is above the energy requirements and this usually occurs in hospitalized cases where quantitative diets can be efficiently instituted. Digestive symptoms are uncommon and even the gastro-intestinal crisis consisting of anorexia, vomiting and diarrhea seen in the adult patient seems to be very rare. In the functional group all 16 children had anorexia or perverted appetites. No child in this group had a weight loss over 5 pounds and a more characteristic finding was a stationary weight. Gastro-intestinal symptoms were not observed except in a few instances where the children were forced to eat by their parents.

The loss of strength is rarely a presenting complaint in children but it can be easily demonstrated by the method of Plummer in having the child step up to a low chair. One is often surprised to find that an apparently active child with exophthalmic goiter is unable to raise himself more than a few inches. The profound weakness of the quadriceps muscle was of great value in a few cases simulating chorea. It however, has its limitations, for in the functional group of cases fatigue was a common complaint and in these cases quadriceps weakness was part of general muscular fatigue.

6. It is difficult to speak with scientific accuracy regarding the determination of basal metabolic rate in children. Besides the difficulty in obtaining results under true basal conditions, variability of methods and lack of agreement on normal standards add to the problem. Under these circumstances reports on basal metabolism must receive individual consideration. Probably the most satisfactory results are obtained in hospitalized patients where more than one determination is made. The standard for children in most common use is that of Benedict and Talbot. The period around puberty however deserves special attention. Many investigators have believed there was a rise in basal metabolism during puberty. A recent study by Dr. Topper of Schick's Clinic[4] is particularly significant. She found an increase in basal metabolic rate in the prepubescent period, reaching its maximum around the time when menstruation was established in girls and sexual maturity in boys and that it declines afterward. The height and duration of increased metabolism varied in each case. Some of the children had no other symptoms. Others presented such symptoms as enlarged thyroid gland, tremor, nervousness, vasomotor instability, cardiac murmur and tachycardia. As a result of her observations she regards increased basal metabolism as physiologic during puberty and that this rise coincides with the physiologic rather than chronologic age. This explains the earlier rise in girls. It also explains the results she obtained in a study of the basal metabolic rates of diabetic children.[5] In this group of girls the elevation of metabolism did not occur until the ages of 15 to 16 years. This was coincident with the onset of their menstruation and it is well known that catamenia occurs later in diabetic girls. Basal

metabolic rates therefore must be interpreted in light of several factors. In 16 patients with true exophthalmic goiter 12 had basal metabolic rates above 30. In the remaining 5 the clinical evidence of increased metabolism was so definite that in spite of relatively low readings the diagnosis was never in doubt. In the functional group only two children had a basal metabolism as high as 30 in any of the determinations and even in these instances it did not persist. Clinically, the pulse rate, heat intolerance, perspiration and nervous fatigue was not as marked as observed in the children with exophthalmic goiter.

SUMMARY

Exophthalmic goiter is a rare disease in children below the usual age limit of 12. The peak of incidence occurs about the age of puberty at which time functional changes occurring at that period may be mistaken for exophthalmic goiter. The differential diagnosis has been discussed under six headings:

1. Persistent tachycardia with elevated blood pressure and pulse pressure.
2. Nervousness and tremor.
3. Enlargement of Thyroid (with a local bruit).
4. Exophthalmos.
5. Loss of weight and strength in the presence of a good appetite.
6. Increased basal metabolic rate.

An attempt has been made to evaluate their diagnostic importance. The statements are based on personal observation of 16 cases of each group and the observations of some of the most recent reports on this subject. The cases of exophthalmic goiter presented were from 546 consecutive cases seen during the past few years.

Diagnosis is stressed in this discussion because it is obvious that it is the most important prerequisite in successful treatment.

BIBLIOGRAPHY

1. Buford, R. K.: Hyperthyroidism in Children Before Puberty, J. A. M. A. 78:1533-1534 (May 20) 1922. Dinsmore, R. S.: Hyperthyroidism in Children, Surg. Gynec. Obst. 42:172-176 (Feb.) 1926. Helmholz, H. F.: Exophthalmic Goiter in Childhood, J. A. M. A., 37:157, 1926. Green, E. I. and Mora, J. M.: Thyroidectomy for Thyrotoxicosis in the Young, Surg. Gynec. Obst., 31:375, 1931.

2. Sattler, H.: Die basedow'sche Krankheit in Kindesalter, Graefe-Saemisch Handbuch der gesamten Augenheilkunde 9:615-637, 1909.

3. Topper, Anne and Mulier, Hannah: Enlargement of the Thyroid Gland in Children. A Study of One Hundred Cases of So-Called Simple Goiter, Amer. Jour. Dis. Child., 40:974-984, (November) 1930.

4. Topper, Anne and Mulier, Hannah: Basal Metabolism of Normal Children. The Puberty Reaction, Amer. Jour. Dis. Child., 43:327-336, (February) 1932.

5. Topper, Anne: Basal Metabolism in Diabetic Children, Amer. Jour. Dis. Child., 42:760-766, Part 1, (October) 1931.

DISCUSSION

Dr. E. M. Stevenson, Bloomington: I should like to take this opportunity to congratulate Dr. Poncher on his very splendid presentation.

Exophthalmic goiter in children has always occasioned considerable interest because of its comparative rarity and because of the problem which it presents for management.

Drs. Billeby and Carlton, of New York, have recently, in a series of 1600 cases from their own clinic, proved only 6 before puberty. They found in the literature 8 cases more. Of the total 14 cases so reported of proven exophthalmic goiter, 6 were three years or under. Dr. Poncher has mentioned 3432 cases as described by Dr. Helmholz. Of this number 30 were proven exophthalmic goiter—26 were girls and 4 boys—all under 14 years of age. This series covered a study period of 5 years. The condition is rare up to the age of puberty, the incidence increasing as we reach the age of 10 to 15 years.

The symptomatology and course of the disease together with the pathology is essentially the same as in adults. The toxicity due to age, aggravates in many children, the symptoms.

The adult with exophthalmic goiter has had opportunity to undergo natural development and growth. The condition in children progresses rapidly, and since these children need thyroid for normal growth and natural normal mental development, early recognition is not only desirable but necessary if management is to be beneficial.

When we consider the etiology of exophthalmic type of goiter, we are considering a debatable question. Heredity, environment, foci of infection, acute infectious disease, and neurogenic imbalance all have their advocates. I should like to call your attention to the fact that the rather universal use of iodized salt in our homes, together with the indiscriminate use of thyroid as a prophylaxis in school children may have a great deal to do with this condition which we find arises more frequently than was previously supposed.

Since all forms of goiter with the exception of the exophthalmic type are due to iodine deficiency, the treatment is obviously prophylactic. For the already active case of exophthalmic goiter the discriminate use of Lugol's solution over rather long periods of time followed at the proper period by surgical intervention is necessary.

Dr. Lahey, of Boston has reported several cases where two stage operations were done believing that there was less shock to the nervous system in these neurogenic imbalanced children and that the crisis which arises as a result of surgical intervention was very much lessened.

I should like to ask the essayist the mean metabolism

rate in these children and what he found with reference to their treatment as regards the use of Lugol's solution.

Dr. M. H. Streicher, Chicago: I should like to ask Dr. Poncher if the diarrhea that he speaks of in this group of cases is present only in the male or female, and just how that diarrhea is controlled, whether it is better controlled by the iodine preparations or by a suitable diet and what that diet is.

Dr. Willard O. Thompson, Chicago: I should like to support the statement about the difficulty of diagnosis, which may be attributed largely to the difficulty of getting accurate determinations of the basal metabolism; and that, in turn, is largely the result of poor metabolic standards in children.

It, of course, has been recognized for years that exophthalmic goiter is rare below the age of puberty; the greatest incidence is between the ages of 15 and 40.

It was not quite clear to me what was meant by the functional group, and it also seems to me that there is a tendency to discuss exophthalmic goiter in children as if it were quite distinct from exophthalmic goiter in later life. Exophthalmic goiter is exophthalmic goiter, regardless of the age at which it occurs: furthermore, in my experience there is no reason to believe that the treatment of the disease in children should differ from that in adults.

One often reads reports in the literature to the effect that exophthalmic goiter tends to disappear spontaneously more readily in children than it does in adults. In my experience, the disease lasts just as long in childhood. Roentgen-ray treatment is usually unsatisfactory for the same reasons as it is in adults. Prolonged treatment with iodine works in about the same percentage of cases in children as it does in adults. Exophthalmic goiter in children is at present best treated by thyroidectomy, just as it is in adults. The only reason for caution is the great importance of the thyroid gland in a growing individual. In the average surgical clinic sufficient thyroid tissue is left at the time of thyroidectomy to prevent the development of myxedema in most cases. In the few instances in which myxedema develops, it can be adequately controlled by desiccated thyroid. In other words, the main point that I wish to make is that exophthalmic goiter is essentially the same in childhood as in later life and presents essentially the same therapeutic problems.

Dr. W. W. Kuntz, Barry, Illinois: It is hard to differentiate exophthalmic goiter from chorea and endocarditis, because of the nervousness, and tachycardia one finds in these children.

A year ago I had a case in a girl aged eleven convalescing from measles, who with a slight elevation of temperature developed a very rapid heart with a slight reduplication of the second sound. I first thought I had a case of endocarditis to deal with, but by watching it over a few weeks I concluded that it was a case of toxic goiter. I hesitated to make that diagnosis until I had inquired of several of my colleagues whether or not they had ever seen a case in a child of that age. Though I had no basal metabolism test made every other symptom conformed with that of toxic goiter, and I finally regarded it as such.

Under rest and Lugol's solution she eventually made what I regarded as a good recovery. Just recently, however, under strain of final examinations she has developed an increase of nervousness, and a renewed tendency to rapid heart action.

Dr. E. L. Jenkinson, Chicago: I did not intend to get up and take part in this symposium, but being a radiologist I am interested in the x-ray therapy of thyroidism, not particularly in children because we have not treated many of them.

I agree, of course, that in isolated cases if we report one or two patients probably the results may be bad, but over a period of sixteen years treating some thousands of cases I think that x-ray results are comparable with those of surgery. It is true that you are not going to get cures in all of them, by any means, any more than you are in surgery; but in selected cases I do not believe there is any doubt but what we do obtain good results with x-ray therapy.

In our last report of a thousand cases we reported 80 per cent—I am not going to use the word "cure," because these patients, of course, are apt to have recurrence if they live long enough; this also applies to surgery—but 80 per cent of these patients were definitely improved. Where the metabolism returned to normal they gained weight and they were able to carry on a normal occupation.

There are certain types of thyroids, of course, that are not applicable to x-ray therapy. It is useless to treat any cystic thyroid. It is useless to treat a thyroid where you have mechanical symptoms; these are primarily surgical; but there are cases, especially of these exophthalmic types, which do respond to x-ray therapy. That is not only my own experience, but there are thousands of other cases in the literature which show definite improvement. I do not mean that it will cure all of them, I do not think that any of us cure all of them; but I think that with the cooperation of the internist, the surgeon, and the radiologist good results can be obtained in many cases. Saying the x-rays are of no value in the treatment of hyperthyroidism based on one or two cases is certainly not conclusive.

Dr. Poncher (in closing): In answer to Dr. Stevenson the average metabolic rate was difficult to determine because some of the children were on Lugol's when they came to us. In most of the untreated cases, however, the first determination was above +30. Basal metabolism tests in children are open to so many variations that it is difficult to speak with scientific accuracy regarding them.

Lugol's solution gives the same results in exophthalmic goiter in children as it does in adults. Some workers even report cures with this treatment alone. It is common experience to find that one can administer Lugol's to an exophthalmic goiter patient with clinical improvement for a longer period than was previously thought. Patients under this management, however, should be seen frequently.

In answer to Dr. Barker's question about the possibil-

ity of a child developing hyperthyroidism when receiving iodine, such cases have been recorded in the literature. Marine and Kimball who have had extensive experience with the use of iodine for prophylactic purposes in children state that they have observed no obvious case of exophthalmic goiter developing after the use of iodine.

In answer to Dr. Streicher's question about gastro-intestinal symptoms, particularly diarrhea, we did not see enough gastro-intestinal symptoms in our children to speak with experience. From what has been recorded by other men who have encountered these symptoms in children treatment is the same as for adults.

In regard to Dr. Thompson's discussion, the reason why exophthalmic goiter in children was considered apart from a general discussion of the disease was mainly for diagnostic consideration. In our paper we have attempted to evaluate the classical symptoms of the disease as they are seen in children. This in our opinion, was important because the classical condition is often confused with a symptom complex occurring at puberty especially in girls. As was emphasized in the introduction to this paper it is important to differentiate between true exophthalmic goiter and functional disturbances for purposes of prognosis and treatment. The fact that the peak of incidence of exophthalmic goiter occurs around puberty emphasizes the importance of correct diagnosis. The puberty reaction so closely simulates true hyperthyroidism that great difficulty is often encountered and often a correct diagnosis cannot be established without a period of careful observation. We have termed the children showing symptoms at puberty the "functional group" merely to differentiate them from true exophthalmic goiter. Puberty alone is not always the basis for these symptoms and until our information is more complete it is advisable to refrain from a term which implies more specific information.

While treatment did not come within the scope of our paper there is no essential difference than employed with adults. I should like to say that we probably should not be so dogmatic about what particular type is employed.

In regard to x-ray I do not believe we are in position to say that x-ray does not have a beneficial effect on cases with true hyperthyroidism. We have not employed this treatment long enough nor have carefully evaluated its results. Statements are often found in the literature that a child at this important period should not be exposed to the destructive influences of x-ray. We have no evidence for the latter part of that statement, and it is an injustice to the intelligent use of this treatment. We are not in a position to compare it with the operative procedure because of our more extensive experience in surgical treatment.

In regard to the case that was cited following infection with measles. Cases of this type are very interesting and sometimes most confusing. It is not uncommon to see children who show symptoms simulating hyperthyroidism following focal infection and acute infectious diseases. Careful observation, however, usually establishes the correct diagnosis.

REPORT OF A CASE OF DIAPHRAGMATIC HERNIA WITH REVIEW OF THE LITERATURE

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That the diagnosis of diaphragmatic hernia as a clinical entity has progressed with medical science is evidenced by a review of the literature. Many large series of cases up to 1927 have been reported. Thus we find that prior to 1899 Grosser lists 183 cases. From 1900 to 1927 John Homer Woolsey lists 106 cases. We have presented very briefly a composite of all the findings and completed the study to 1930, and added a case report. Articles from the Quarterly Cumulative Index Medicus were used. From 1927 to 1930 inclusive we found 136 cases. In the four years studied we found as many cases reported as Woolsey was able to find in 27 years, and only 47 cases less than the total number reported prior to 1899 by Grosser. Diaphragmatic hernia, perhaps not more common than formerly, is recognized more frequently. That the x-ray has played an important role in the diagnosis of this condition is reflected in all the cases reviewed.

Mal-development of the diaphragm with improper fusion of the component parts is responsible directly or indirectly for over 60% of all cases. Trauma, fall, stab, gunshot wounds and crushing injuries as etiological factors are next. In the acquired type, the following are important contributing factors: constipation, pregnancy, exertions, obesity, chronic cough, ascites, subphrenic abscess or empyema with rupture of the diaphragm.

The following types of diaphragmatic hernia are discussed: 1. congenital; 2. acquired; 3. traumatic; 4. esophageal opening hernia; 5. thoracic stomach; 6. eventration; 7. true and false hernia.

A true hernia is one in which there is present a sac or membrane covering the hernia. A false hernia is one in which there is no sac or membrane. More than 80% of all hernias have no sac and therefore are false hernias.

Eventration and thoracic stomach although discussed under this heading should not be classified as diaphragmatic hernias. In an eventration there is an absence of the musculature in the diaphragm with a bulging into

the thoracic cavity. The diaphragm is composed of pleura, smooth muscle, peritoneum, and a small amount of connective tissue. There is no rupture of the diaphragm.

In thoracic stomach the diaphragm is intact on both sides but the stomach is entirely or partially within the chest cavity. The esophagus is short and the duodenum or pyloric end of the stomach passes through the opening in the diaphragm which normally accommodates the esophagus.

The preponderance of left-sided diaphragmatic hernia is variously quoted at 5 to 1 to 12 to 1 over right-sided diaphragmatic hernia. The cause is probably due to the embryologic

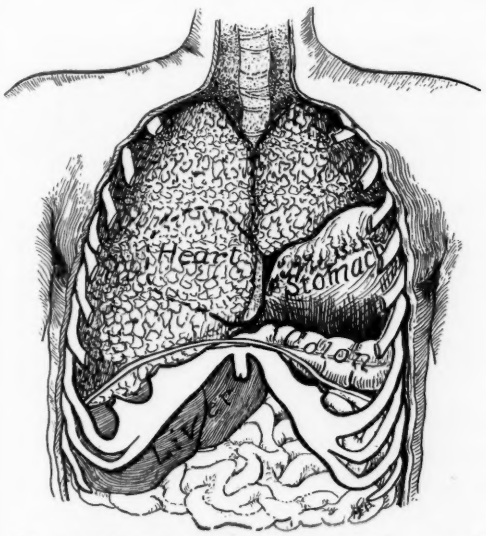

Fig. 1. Schematic drawing of hernia as it appeared at autopsy. Note presence of colon, stomach and omentum in thoracic cavity.

formation of the left side of the diaphragm which is more complicated, closes later, is less vascular, and is more prone to interference with nourishment and consequent arrest of development. Further, the protection afforded the right side of the diaphragm by the liver would make it less prone to diaphragmatic hernia.

Every case of left-sided gun-shot wound of the chest or crushing injury of the trunk is a potential diaphragmatic hernia. The constant negative pressure of the thorax lends its assistance by drawing the omentum into the opening and preventing its closure.

A synopsis of some of the large groups of cases reported are summarized in the following tables:

	False	True	Unknown	Total
Congenital	32	12	6	50
Acquired	3	20	5	28
Traumatic	27	1		28

Left side, 81; Right side, 13; Unknown, 12.
(John Homer Woolsey—San Francisco, Cal.)

Hedblom reports 378 cases as follows:

Traumatic	60.1%
Congenital	14.7%
Acquired	14.8%
Indeterminate	10.3%

Bohn reports 80 cases in which only 14 cases were found where a hernial sac was present.

Popp reports 42 cases in which 37 were left-sided and 5 right.

Ballantyne reports 67 cases, 47 males and 27 females.

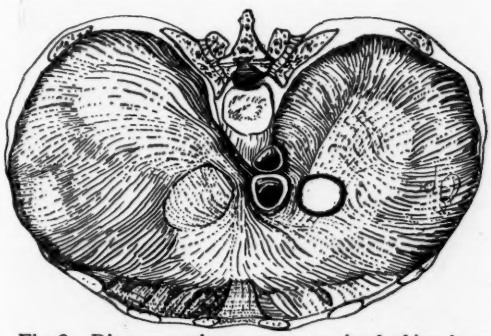

Fig. 2. Diagrammatic transverse section *looking down* upon the dome of the diaphragm showing location and relative size of hernial opening (left).

Hedblom found only 6 cases in infants under 1 year of age.

In the obstetrical hospital, the University College Medical School, London, they report one case of diaphragmatic hernia in 800 deliveries and 1 case in 200 autopsies.

In our series we found:

TYPE:

Congenital	63
Traumatic	32
Acquired	22
Indeterminate	19

SEX:

Male	93
Female	39
Infants (under 1 year)	4

AGE:

The majority were in the third and fourth decade.
A case has been reported by Carman in a female 75 years of age.

LOCATION:

Left side	116
Right side	14
Unknown	6

There was a definite hernia sac in only 21 cases of the 136 reviewed.

The most common location of occurrence of these hernias, especially of the congenital and acquired type was:

1. Esophageal opening.
2. Dome of diaphragm, particularly the left.
3. The embryonic fusion points.

The traumatic hernias may occur in any location but particularly at an embryonic fusion point or at a congenital weak point in the diaphragm.

CASE REPORT

White male, 30 years of age, single, laborer and a native of Illinois. He was committed to the Dixon State Hospital on August 11, 1921, and remained there until February 17, 1922. The diagnosis there was epileptic psychosis. He was discharged as improved and remained home until August 21, 1930, when he was committed to the Elgin State Hospital. At this time he attempted to commit suicide by stabbing himself about three days before admission with a sharp table knife. At the time of admission, the sutures were still in the area of the wound, on the left-side in the sixth interspace in the mid-clavicular line and about 3 cm. in length. Immediately after admission here he had a severe convulsive seizure. He was very much confused for two weeks. In about four weeks he had completely recovered from his epileptic seizure and had been very agreeable and cooperative and had made a very good adjustment. The diagnosis here was epileptic psychosis with clouded states. He was assigned as a helper in the physiotherapy department and his physical condition was good until January 19, 1931, approximately five months since his admission, when he complained of a very acute pain in the left chest and was removed to the general hospital.

Fig. 3. Photograph of hernia from below. Museum specimen. Illinois State Psychopathic Institute.

When seen at the hospital he was in a state of shock, in great suffering and sweating profusely. The temperature was sub-normal, the pulse rapid and the respiration shallow. There was associated frequent vomiting and a slight hiccough. Physical examination revealed a dullness over the entire left chest, more marked in the upper half. There was an absence of breath sounds. The heart was displaced entirely to the right of the midline.

X-ray and fluoroscopic examination revealed the heart displaced in the right chest. In the lower half there was a large, circumscribed, cocoanut-sized area of decreased density, with an apparent absence of lung tissue. The left diaphragm could not be differentiated.

A diagnosis of diaphragmatic hernia with strangulation was made. Due to the poor condition of the patient, surgical treatment could not be considered. The patient grew steadily worse and died January 21, approximately 54 hours after the onset of symptoms.

Fig. 4. Photograph of hernia. Lateral view. Museum specimen. Illinois State Psychopathic Institute.

At autopsy, in the sixth interspace, mid-clavicular line, in the substance of the external intercostal muscle, there was a thin linear fibrous band corresponding to the same lesion in the skin in the same area. In the parietal pleura below this scar, it could not be further identified.

The diaphragm on the right side in the mid-clavicular line, reached to the fifth interspace; on the left, it was parallel with the costal arch.

The left thoracic cavity contained about 1,500 cc. of a cloudy, brownish fluid. The left lung was com-

pletely collapsed. The heart was entirely to the right of the midline.

4 cm. to the left of the midline and between the muscle fibers that join to form the left crus of the diaphragm, and on a level with the twelfth thoracic vertebra there was a circular opening 5 cm. in diameter. Through this opening, the stomach, the gastro-colic ligament, and part of the middle third of the transverse colon passed into the thoracic cavity. The cardiac and pyloric ends were in the abdomen. The transverse colon was kinked. The pancreas and spleen were displaced towards the opening. There were no adhesions, or any hernial sac or membrane. The abdomen contained 200 cc. of a faint red, serous fluid. The stomach was very soft, brownish-black in color, and spotted with many light red areas. There was a large opening about 8 cm. in diameter. The area surrounding it was greatly thinned and very soft, a postmortem softening and rupture. When distended this mass filled the thoracic cavity to the 2nd interspace.

In the case presented the question of classification must be considered. The history of the injury sustained by this man is not sufficient to warrant a diagnosis of traumatic hernia. We feel, however, that this individual, an epileptic, with epileptic seizures, was under a severe muscular strain, especially of the diaphragm and abdominal muscles. It is not unreasonable to assume that each time he had a seizure, there was a gradual yielding of this, a congenital weak point in the diaphragm. Therefore, we classify this case as a false acquired diaphragmatic hernia.

Discussion: Diaphragmatic hernias are composed of, in the order of frequency: stomach, omentum, transverse colon, spleen, jejunum and ileum, duodenum, cecum and appendix ascending and descending colon. The kidneys and pancreas are very rarely included in these hernias. The diagnosis of diaphragmatic hernia is usually delayed. In the traumatic type, there is a considerable time interval in most cases between the occurrence of the traumatic lesion of the diaphragm and the recognition of the subsequent hernia of the abdominal contents. The congenital and acquired type may persist from childhood to old age without symptoms distressing enough to point out a diaphragmatic hernia. The most and only positive method in the living is the x-ray and fluoroscope.

In many cases an x-ray picture or fluoroscope examination in the erect position will not reveal the hernia; however, in the recumbent position it may be clearly defined.

Early diagnosis and early surgical intervention is indicated when the patient's condition permits. There are various technical operations resorted to by the thoracic, the abdominal, or a thoracic-abdominal route. There is also a two-stage operation usually employed in hernias which are very large and in which there is, first, an extra-pleural thoraco-plasty involving the lower chest on the affected side; and second, the repair operation. There is also a method in which the first stage is a left phrenicotomy which serves to relax the left half of the diaphragm; second stage, repair. The advantage of the phrenicotomy is that it acts as a palliative in certain cases of mild diaphragmatic hernia in which radical surgery is contraindicated. It is also valuable in obese patients and in patients where a plastic operation on the diaphragm for a large hernia is to be performed. Large defects in the wall of the chest and diaphragm may be repaired and a closed thorax maintained by utilization of the paralyzed diaphragmatic musculature following phrenicotomy. The prognosis in diaphragmatic hernia is usually grave due to a slow diagnosis and late operative interference. Early diagnosis and early operation reduce the mortality 50%.

The causes of death following operations are: 1. Shock; 2. Peritonitis; 3. Pneumonia; and 4. Empyema.

The commonest complication following operation is pleural effusion.

According to Hedblom, the mortality rate in the non-obstructed cases is 24%; in obstructed cases 53%.

LAPAROTOMIES

Laparotomies	43%
Thoracotomies	20%
Combined operation	26%

Strangulation occurs in about 15%.

CONCLUSIONS

1. Small hernia of the diaphragm may be present for years without causing symptoms.

2. Diaphragmatic hernias occasionally follow seemingly insufficient trauma to account for the amount of diaphragmatic injury. It is reasonable to suppose these conditions occur as a result of slight injury or sudden muscular contraction on a small diaphragmatic defect already present.

3. Diaphragmatic hernia is more frequent in the male than in the female.

4. Diaphragmatic hernia is more frequent on the left side than on the right.

5. Congenital diaphragmatic hernias constitute the largest number of diaphragmatic hernias with the traumatic and acquired practically equally numerous.

6. The occurrence of these hernias is usually through a normal opening in the diaphragm, dome or the embryonic fusion points.

7. Every case of gunshot, stab wound or crushing injury of the chest is a potential diaphragmatic hernia.

8. Thoracic stomach is not a true diaphragmatic hernia, nor is eventration.

9. The prognosis is usually grave; however, by early diagnosis and early surgical intervention we can hope to reduce the mortality.

In closing, I wish to express appreciation and thanks to my good friend, Dr. Sidney D. Wilgus, Director of the Institute and State Alienist, for his many constructive suggestions. Also, I wish to thank Dr. George A. Wiltrakis of the Elgin State Hospital who assisted me at the autopsy, and furnished much of the clinical data on the case reported. Without Miss Olladene Twaddle, my efficient secretary, this article would not have been possible.

BIBLIOGRAPHY

1930

1. (L. C. Ager) U. S. Vet. Bur. M. Bull. 6:971-973, Nov. 1930.
2. (A. d'Istria) Riforma med. 46:1037-1046, June 30, 1930.
3. (J. M. W. Morrison) Proc. Rov. Soc. Med. (Sect. Electro-Therap.) 23:23-42, Sept. 1930.
4. (R. L. Sanders) Tr. South S. A. (1929) 42:30-52, 1930.
5. Associated with traumatic gastric erosion and ulcer, (S. W. Harrington) Surg. Gynec. Obst. 51:504-521, Oct., 1930.
6. At esophageal opening; 2 cases (J. Frimann-Dahl) Norsk mag. f. laegeridensk. 91:616-620, June, 1930.
7. Case (A. Bianchini) Radiol med. 17:1127-1149, Oct., 1930.
8. Chronic traumatic hernia; case (E. Breitkopf) Beitr. z. klin. chir. 150:22-327, 1930.
9. Clinical diagnosis in nursling; case, (C. Bonzanigo) Ztschr. f. kinderh. 50:253-258, 1930.
10. Congenital (A. Daly Smith) M. J. Australia 2:333, Sept. 6, 1930.
11. Congenital; case (G. S. Metcalf) Wisconsin M. J. 29:576, Oct., 1930.
12. Congenital hernia in do. (A. P. Bystrow) Anat. anz. 70:192-212, Aug. 14, 1930.
13. Congenital; preliminary report of case (W. N. Bradley, J. D. Zulich, E. E. Mckee) Arch. Pediat. 47:384-391, June, 1930.
14. Congenital stenosis of oesophagus in children, associated with diaphragmatc hernia of stomach (A. B. Kelley) Prop. Roy. Soc. Med. (Sect. Laryng.) 23:71-76, Sept., 1930; also J. Laryng and otol., 45:680-685, Oct., 1930.
15. Congenital: 3 cases (H. J. Epstein) M. J. & Bec. 132:76-78, July 16, 1930.
16. Differential diagnosis of diaphragmatic eventration and diaphragmatic hernia; case (B. Bisbini) Bllo. d. soc. med. chir. di modena 30:127-142, 1929-1930.
17. False hernia with dilatation of cardia and esophagus (I. Abell) S. clin. North America. 10:909-912, Aug. 1930.
18. Nonincarcerated, true, parasternal, right sided hernia; case (D. Curri) Beitr. 2 klin. chir. 149:446-456, 1930.
19. Of right side (G. P. Reid & E. P. Russell) Tr. A. Resid. & ex-resid. physicians, Mayo clinic (1929) 10:78-80, 1930.
20. Parasternal diaphragmatic hernia or primary diaphragmatic eventration with consecutive diaphragmatic hernia; case (G. Spagnolio) Am. Di. Clin. Med. (Spec. no. 1) 19: 734-749, 1929.
21. Progress in roentgenologic diagnosis (B. R. Kirklin) Proc. Staff meet. Mayo clinic 5:197, July 16, 1930.
22. Progress in roentgenologic diagnosis (A. B. Moore & B. R. Kirklin) J. A. M. A. 95:1966-1969, Dec. 27, 1930.
23. Right sided hernia; case (T. H. Oliphant) New Orleans, M. & S. J. 83:104-109, Aug. 1930.
24. Right sided true diaphragmatic hernia with unusual features (G. H. Dodds & J. A. Procok) Arch. Dis. childhood, 5:233-235, June 1930.
25. Successful surgical treatment of congenital hernia in nursling; case (L. Schonbauer & J. Warkany) Ztsch. f. Kinderh, 50:125-131, 1930.
26. Traumatic; case (C. Polson) Brit. J. Surg. 18:170-172, July 1930.
27. With symptoms of incarceration (A. Sennels) Ugesk f. laeger, 92:274-276, March 20, 1930.

1930

1. Diaphragmatic (W. A. Angwin) U. S. Nov. M. Bull. 28:106-112, Jan. 1930.
2. (J. Connly) Arch. de mid. d. inf. 33:233-240, April 1930.
3. (W. H. Sadlier) New Zealand M. J. 29:14-16, Feb. 1930.
4. (Pe. E. Trusdale) Internat. Clinic. 1:14-23, March 1930.
5. Acute hernia in horse: case, (Quentin) Rev. de. mid. vit. 106:90-93, Feb. 1930.
6. Case, (J. H. Robertson) Tr. Roy. Med. Chir. Soc., Glasgow. 23:105-108, 1928-1929.
7. Complete unilateral hernia, (G. B. Meyros) Pennsylvania M. J., 33:390-391, March 1930.
8. Congenital, (St. J. W. Dansey) M. J. Australia. 2:920-922, Dec. 28, 1929.
9. Congenital (A. Van Westoremen) Nederl. mandschro. v. generask; 16:534-539, 1929-1930; abstr. Nederl, tijdschr. v. generask. 74:953, Feb. 22, 1930.
10. Congenital bilocular stomach with intrathrocaci pouch of hernia through diaphragmatic hiatus (R. Brock A. Jaubert de Boejen) J. ed radiol. et d'electrol. 14:13-22, Jan. 1930.
11. Congenital hernia of stomach (R. Noblicout & Boulonger Piblib) Arch. de med. d. enf. 32:660-665, Nov. 1929.
12. Diagnosis (L. F. Watson) M. J. & Rec. 131:95-96, Jan. 15, 1930.
13. Diagnosis of hernia (traumatic) with acute obstruction, (F. S. Gibson) F. Sect. Surg., General & Ald., A. M. A. pp. 131-145, 1929.
14. Hernia of stomach through esophageal orifice of diaphragm (M. Etro) J. A. M. A. 94:15-21, Jan. 4, 1930.
15. Hernia through esophageal opening of diaphragm (C. C. Anderson) Radiology. 14:602-604, June 1930.
16. Hernias and eventrations: case, (J. M. Madinaveitia) Progressos de la Clinc. 37:665-668, Nov. 1929.
17. In children (P. E. Truesdale) Tr. Sect. Dis. Child A. M. A. pp. 62-79, 1929.
18. Massive hernia without diagnostic symptoms, (W. L. Keller) Am. J. Surg. 8:598-594, March 1930.
19. Nontraumatic, (J. F. Edward & L. S. Otell) Am. J. Roentgenol., 22:535-542, Dec. 1929.
20. Of esophageal hiatus combined with gastric ulcer and fatal hemorrhage. (M. Kronsjol) Senska lak. tidning. 26:1067-1072, Sept. 13, 1929.

21. Of esophageal hiatus: surgical treatment: case (S. Hyblinette) Acta chir. Scandinav. 65:550-557, 1929.

22. Of stomach: medical form without previous traumatism (R. Luton & M. Gauch) Bull et mine. Soc. mid. d. hop. de Paris (54) 302-304, March 3, 1930.

23. Of transverse colon: case (L. Lemaitre) Echo m. du mord. 34:49-52, Feb. 1, 1930.

24. Phrenic nerve stimulation under fluoroscope as aid in diagnosis (R. H. Overholt) Amm. Surg. 91:381-391, March 1930.

25. Phrenic neurectomy as treatment (F. Hord) Acta med. Scandinav. 72:511-526, 1929.

26. Right sided traumatic hernia: case (F. N. Dealy) Am. J. Surg. 8:1033-1038, May 1930.

27. Roentgen diagnosis (D. Hanamuro) Toivan, Igakkai Zasshi, no. 296, p. 63, Nov. 1929.

28. Surgery (V. S. Levit) Vestrik. Kkir. (no. 52) 18: 55-63, 1929.

29. Symptoms of hernia of stomach (E. Whedon) Colorado Med. 27:108-113, March 1930.

30. Thoracic stomach: case (C. G. Lyons) Am. J. Vet. Bur. M. Bull. 6:65-66, Jan. 1930.

31. Traumatic (M. A. Russell) Am. Surg. 91:679-685, May 1930.

32. Treatment (L. F. Watson) Am. J. Surg. 8:1001-1003, May 1930.

1929

1. (S. W. Harrington) S. Clin. North America 9:142-147, Feb. 1929.

2. Case (S. J. De Koch) J.M.A. South Africa 2: 635-636, Dec. 8, 1928.

3. Case (F. W. Fordyce & H. H. Dilley) J. Iowa M. Soc. 19:124-125, March 1929.

4. Case (J. H. Robertson) Glasgow M. J. 111:212-215, April 1929.

5. Case (A. J. Simon) Cosop. lik cesk. 67:423-427, March 19, 1928.

6. Case in infant (G. H. Dodds & J. D. S. Flew) J. Obst. & Gynec. Bact. Emp. 35: 737-742, 1928.

7. Case with traumatic gastric ulcer (S. W. Harrington) Proc. Staff Meet. Mayo Clinic. 3:241, Nov. 28, 1928.

8. Choice of surgical method of intervention (I. Barcaroli) Policlinica (sez. Prot.) 35:2035-2040, Oct. 22, 1928.

9. Clinical aspects and pathogenesis (G. Adamy) Bertz. 2 Klin. d. Tuberk. 70:461-464, 1928.

10. Congenital: case (D. Mari) Pedivitria Prot. 6:47-54, Feb. 1929.

11. Congenital: total hernia of new born due to absence of left side of diaphragm (A. P. Giangiobbe) Rev. med. latino-am 14: 525-534, Feb. 1929.

12. Diagnosis: case (H. Engels) Frotschr. a. d. Geb. d. Rontgenstrohler 38:500-508, Sept. 1928.

13. Diag. of congenital hernia: case (E. J. Schisler) J. Missouri M. A. 26:228-231, May 1929.

14. Diaphragmatic hernia (Cabot case 15022) New England J. Med. 200:88-92.

15. Eventration into thorax from congenital malformation of diaphragm: case (E. Vigitti) Rev. med. del. Rosaria 18: 502-507, Dec. 1928.

16. Gastric ulcer with congenital hernia: 2 cases (W. Collier, A. F. Hurst & E. W. Sheof) Guy's Hosp. Rep. 79:159-172, April 1929.

17. Hernia of right ½ of diaphragm: roentgen ray diag.: 3 cases (a. Uppernsky) Fortschr. a. d. geb. d. Rontgenstrohlen 38:845-852, Nov. 1928.

18. Hernia through esophageal opening of diaphragm complicated by esophageal carcinoma: 3 cases (G. Wolf) Klin. Wchnschr. 7: 2007-2000, Oct. 14, 1928.

19. Incarcerated hernia in infant, with operation and recovery (R. B. Bettm & J. H. Hess) J.A.M.A. 92:1014-1016, June 15, 1929.

20. Non-traumatic, congenital case (F. Neugebauer) Beitr. z. klin. chir. 144:213-233, 1928.

21. Operation 3 cases (F. Kirshner) Med. Klin. 25:262-264, Feb. 15, 1929.

22. Pathogenesis and treatment (L. Lozzarini) Arch ed atti d. Soc. ital. di chir. (1927) 34:613-617, 1928.

23. Phrenicotomy in treatment (S. W. Harrington) Arch. Surg. 18:561-598, Jan. (pt. 2) 1929.

24. Repair by 2 stage operation employing preliminary extra pleural thoracoplasty (G. L. Carrington) Am. Surg. 89:512-520, Apr. 1929.

25. Roentgen diag. of hernia through aorti hiatus (T. Birsony) Frots hr. a. d. Geb. d. Rontgenstroahlen 38:629-641, Oct. 1928.

26. Role of intrathrocaci displacement of kidney in causation of congenital hernia. (H. O. Kleine) Bectr. z. path. anat. w. z. allg. Path. 80:609-621, Oct. 6, 1928.

27. Surgical treatment of strangulated hernia: case (J. Lessa de Azevech) Sciencia med. 2-10, Jan. 1929.

1928

1. (W. E. Hunter) California & West. med. 29:227-232, Oct. 1928.

2. Bilateral (D. Paterson) Proc. Roy. Soc. Med. (Sect. dis. child.) 21:86-89, Aug. 1928.

3. Case (S. J. Buxton) Tr. M. Soc. London 50:50-7, Oct. 25, 1926.

4. Case (S. W. Harrington) Proc. Staff Meet., Mayo clinic, 3:258, Aug. 29, 1928.

5. Case (evisceration) (J. L. Thomas) Brit. M. J. 2:985, Dec. 1, 1928.

6. Congenital case (W. Szunck) Polska gax. lek. 7:559-560, July 29, 1928.

7. Diagnosis & treatment (R. Bobell) med. Welt. 2:512-515, April 7, 1928.

8. Diaphragmatic hiatus hernia and esophageal diverticulum; roentgen diagnosis (J. Simon) acta radiol. 9:296-301, 1928.

9. Due to slight traumatism with indirect effect; case (L. Lazzarini) clin. chir. 31:841-856, Aug. 1928.

10. Fenestra of diaphragm (H. R. Fishbock) Arch. Path. 6:867-870, Nov. 1928.

11. Nontraumatic right sided hernia; case (I. Iriarte & P. V. Cernados) Semana med. 2:736-747, Sept. 20, 1928.

12. Of stomach; case (V. Pauchet & G. Luquet) Med. Inf. 34:120-127, April 1928; also J. de med. de Paris 47:407, May 24, 1928.

13. Of stomach with protrusion through esophageal orifice; 2 cases (P. & L. Farinas) Arch. de la Soc. estud. clinic 28: 158-162, May 1928.

14. Operation by abdominal route; case (P. Delbet) Bull. et mem. soc. nat. de chir. 54:806-808, June 9, 1928.

15. Paraesophageal hernia, 'thoracic stomach; case (1. Hollaender) Fortschr. a. d. Get. d. Rontgenstrahlen 37:843-847, June 1928.

16. Pathology; clinical aspect in new born and adult (G. Baudet) Gaz. d. hop. 101:1305-1308, Sept. 15, 1926.

17. Post-traumatic (B. B. Crohn) M. Clin. North America 12:583-591, Nov. 1928.

18. Radiographic aids in diagnosis of diseases of esophagus and cardia (J. R. Canty) New York State j. Med. 28:1111-1112, Sept. 15, 1928.

19. Radiologic diagnosis of right congenital hernia of left angle of colon (C. Dissez) Arch. d'electric. med. 38:301-303, July 1928.

20. Rent in left diaphragm; case (G. Ferro Roxas) Gior. di clin. med. 9:311-318, May 20, 1928.

21. Results of operation for recurrent form after 7 years, case, (R. Leiche) Bull. et meni. Soc. nat. de chir. 54:812, June 16, 1928.

22. Roentgenological diagnosis (L. T. Leltald) Am. J. Roentgenology 20:423-430, Nov. 1928.

23. Spurious case of congenital hernia in new born; death (M. Karlin) med. Welt. 2:62, Jan. 14, 1928.

24. Strangulated; case (J. W. Ellis) U. S. Nov. M. Bull. 26:924-927, Oct. 1928.

25. Traumatic; case (K. Schultz-Jena) Med. Welt. 2:251-254, Feb. 18, 1928.

26. Traumatic hernia of stomach (P. Lecene) Bull. et mem. Soc. Nat. dr chir. 54:933-935, July 7, 1928.

27. Two cases; one of traumatic origin (A. Humant) Rev. med. de l'est. 56:81-85, 1928.

28. With report of case (E. Abercrombie) J. Tennessee M.A. 21:261-266, Nov. 1928.

29. With report of cases (R. G. Giles) Texas State J. Med. 24:418-421, Oct. 1928.

1927

1. Dumesny (Jean) Contribution au diagnostic de la hernie diaphragmatique Paris, 1926, 47 p., 1 pl., 8°.
2. (R. Feissly) Arch. d. mal. de l'app. digestif 17:62-64, Jan. 1927.
3. (R. S. Morrish 1 C. D. Chapell) J. Michigan M. Soc. 26:290-292, May 1927.
4. Abnormalitus of right side of diaphragm (E. Reiser) Med. Klin. 22:1607-1609, Oct. 15, 1926.
5. Case diagnosed by radiography (Vignal) Bull. et mem. Soc. de Radiol. Med. de France 15:29-31, Jan. 1927.
6. Congenital diaphragmatic hernia with dextracordia (E. Argonz & F. B. Ruiz) Semana Med. 1:109, Jan. 13, 1927.
7. Diagnosis and treatment (J. Quenu) Arch. med.-chir. de l'opp. respir. 1:356-378, 1926.
8. Diaphragmatic hernia in woman; (R. H. Hunter) Brit. M.J. 1:463, March 12, 1927.
9. Diaphragmatic hernia of eventration type. (J. M. Woodburn Morison) Acta Radiol. 7:214-219, 1926.
10. Diaphragmatic hernia with report of case (J. H. Gambrell) Texas State Jour. Med. 2:748-751, April 1927.
11. Diaphragmatic hernia with report of case (G. T. Johnson) J. Indiana M.A. 20:135-140, April 1927.
12. Four cases (J. M. Madinaveitia) Progresos de la clinica 34:441-451, Oct. 1926.
13. In infant-case (V. Ginstinian & A. Antonelli) Semana Med. 1:314, Feb. 3, 1927.
14. Nontraumatic diaphragmatic hernia, report of case in child 4 years (J. S. Leopold) Amer. J. Dis. Children 33:597-601, April 1927.
15. With relaxation of left half of diaphragm, case (A. Montanari) Radiol. Med. 14:33-39, Jan. 1927.
16. (A. R. Shreffu) M. Clin. N. Amer. 11:561-568, Sept. 1927.
17. (S. W. Harrington) S. Clin. N. Amer. 7:1518-1522, Dec. 1927.
18. (W. A. Morison) S. Clin. N. Amer., 7:1165-1176, Oct. 1927.
19. (J. H. Woolsey) J. A. M. A. 89:2245-2248, Dec. 31, 1927.
20. Case (Etienne & Sicard) Bull. Soc. d. med. et biol. de Montpellier 8:170-173, March 1927.
21. Case (Hillput) Vereinsbl d. pfälz. aerzte. 39:191, June 1, 1927.
22. Case (R. F. Jomers) Brit. J. Surg. 15:332-333, Oct. 1927.
23. Clinical and roentgenological study in 15 cases of nontraumatic left diaphragmatic hernia (H. K. Pancoast) (R. S. Boles) Fr. Am. gastro-enterology—A. 29:23-36, 1927.
24. Complete false congenital diaphragmatic hernia, case (J. M. Bush) Arch. Pediati 44:612-619, Oct. 1927.
25. Congenital case (G. P. Dunne) Minnesota Med. 10:773, Dec. 1927.
26. Congenital, 2 cases (R. Pollitzer) Clin. ed. ig. infant 2:61-73, March 15, 1927.
27. Death of mother during labor from traumatic hernia (J. Gronzow) Fortschr. a. d. Geb. d. Röntgenstrahlen 35:1246-1252, April 1927.
28. Diagnosis and Surg. treatment (H. Seidel) Aentralbl. f. chir. 54:834-843 April 2, 1927.
29. Diagnosis in living infant, case (Jung) Bull. sve. d'obst. et de gynec. 16:237, March 1927.
30. Differential diagnosis of relaxation and hernia (K. Schlapper) Beitr. Z. Klin. d. tuberk. 66:260-263, 1927.
31. Eventration and hernia (J. M. Modinaveitia) Progresos de la clinica 35:243-250, April 1927.
32. Hernia hiatus oesophagei, case (M. von Falkenhausen) Fortschr. a. d. Geb. b. Röntgenstrahlen, 35:985-989, March 1927.
33. Hernia of stomach thru esophageal hiatus (E. Castronavo) radiol. med. 14:211-219, March 1927.
34. In adults, general discussion with case (C. Cornioley) Schweiz Med. Wchnschr. 57:929-933, Sept. 24, 1927.
35. In new born infant, case report (R. M. Tyson) Arch. Pediat. 44:557-561, Sept. 1927.
36. Including report of case with x-ray films (D. F. Clark) Illinois M. J. 52:63-69, July 1927.
37. Operation of strangulated diaphragmatic hernia (E. R. Hesse) Russk Klin. 7:551-553, April 1927.
38. Repair (C. H. Mayo) Ann. Surg. 86:481-484, Oct. 1927.
39. Review (L. Lazzerini) Gozz. d. osp. 48:721-724, July 31, 1927.
40. Strangulated congenital; operation; recovery (C. Leo) Gozz. d. osp. 48:772-775, Aug. 14, 1927.
41. Thoraco-peritoneal operation for hernia of diaphragm (P. E. Truesdale) Ann. Surg. 86:238-243, Aug. 1927.
42. With involvement of liver and subsequent rupture of hernial sac; case (J. Lüning) Centralbl. f. allg. Path. u. path. anat. 40:90-106, Aug. 1, 1927.
43. With report of case of congenital variety complicated by periodic rotation of stomach (J. Evans) Am. J. Roentgenal. 18:133-136, Aug. 1927.
44. With typical gastro-cardiac complex, case (Schottmüller) Deutsche Med. Wchuschr. 53:683, April 15, 1927.

1926

1. Case of congenital diaphragmatic hernia (A. Dondarini) Pediatria 33:1293-1296, Dec. 1, 1925.
2. Case of diaphragmatic hernia (H. Grenet, G. Maignut and Schmite) Bell et Mem. Soc. Med. d. Hop. de Paris, 49: 1493-1496, Nov. 27, 1925.
3. Case of hernia of stomach and transverse colon through diaphragm. (E. C. Bridges & J. Fawcett) Lancet 1:278-280, Feb. 6, 1926.
4. Case of left paraesophageal diaphragmatic hernia (L. Reich) Klin. Wchnschr. 5:607-608, Apr. 2, 1926. Illus.
5. Chronic ulcer of stomach with erosion of branch of pulmonary artery in transdiaphragmatic prolapse of stomach after gun shot wound of thorax and diaphragm (K. Schaper) Deutsche Ztschr. f. chir. 194:169-180, 1926. Illus.
6. Clin. and treatment of diaphragmatic hernia (O. Uebelhoer) Deutsche Ztschr. f. chir. 194:161-168, 1926. Illus.
7. Congenital diaphragmatic hernia in new born (Ubaldo Fernandez) Rev. Soc. Argent de Nipiol. 1:102-122, 1925 (Illus). Also in Semana Med. 2:1083-1090, Oct. 29, 1925 (Illus). Ab. J.A.M.A. 86, 255, Jan. 16, 1926.
8. Congenital diaphragmatic hernia with complete rotation of stomach. (N. Alpert) M. J. & Record. 123:84-86, Jan. 20, 1926. (Illus.)
9. Congenital diaphragmatic hernia, with report of 7 cases with autopsies. (A. S. Unger and M. D. Speisler) Am. J. Roentgenol. 15:135-143, Feb. 1926.
10. Med. aspect of nontraumatic diaphragmatic hernia; report of case situated on right side anteriorly (L. J. Menville) M. Clin. N. Amer. 9:1073-1087, Jan. 1926. (Illus.)
11. Partial volvulus of stomach in displacement through defect in diaphragm. (H. Hoberer) Deutsche Ztschr. f. chir. 195:80-89, 1926.
12. Two cases of congenital diaphragmatic hernia (J. N. Cruickshank) Glasgow M. J. 105:81-84, Feb. 1926. (Illus.)
13. Diaphragmatic hernia (J. W. Dreyer) Illinois M. J. 50:47-57, 1926.
14. Congenital diaphragmatic hernia in infants; report of case through esophageal opening (J. D. McEachern) Arch. Pediat. 43:688-690, Oct. 1926.
15. Diaphragmatic hernia, case report (N. J. Nessa) Radiology; 7:342, Oct. 1926. (Illus.)
16. Diaphragmatic hernia in young athlete (W. S. Newcomet) Atlantic M. J. 29:687-689, July 1926. (Illus.)
17. Diaphragmatic hernia of esophageal hiatus (A. Akerlund, A. Ohnell, E. Key) Acta radiol. 6:3-68, 1926.
18. Empyema on right side with diaphragmatic hernia (A. Verhagen) Nederl. Tijdschr. v. Geneesk. 2:1421-1423, Sept. 25, 1926. (Illus.)
19. Free diaphragmatic hernia (D. Schaute and C. Orbaan) Nederl. Tijdschr. v. Geneesk. 2:160-162, July 10, 1926. (Illus.)
20. Left transdiaphragmatic hernia; eventration of diaphragm; operations, recurrences, operative technic (P. Z. Rheaume) Press. Med. 34:791-792, June 23, 1926.
21. Nontraumatic left diaphragmatic hernia; clinical and roentgenological studies in 15 cases (H. K. Pancoast & R. S. Boles) Arch. Int. Med. 38:633-646, Nov. 1926.

22. Roentgen diagnosis of diaphragmatic hernia and relaxation (H. Schonfeld) Klin. Wchuschr. 5:1657-1660, Sept. 3, 1926.

23. Surgical treatment of traumatic hernia of diaphragm (E. Kreutu) Zentralbl. f. chir. 53:2130-2132, Aug. 21, 1926.

24. Traumatic diaphragmatic hernia (L. F. Stewart) Atlantic M. J. 29:870-872, Sept. 1926.

25. Traumatic diaphragmatic hernia with intermittent high intestinal obstruction; case report (H. B. Philips) Am. J. Surg. 1:33-34, July 1926. (Illus.)

1925

1. Diaphragmatic hernia of fundus of stomach through esophageal hiatus (L. B. Morrison) J.A.M.A. 84:161-163, Jan. 17, 1925.

2. Case of acquired impacted pseudohernia of diaphragm (H. Koopman) Munchen Med. Wchnsche. 72:1159-1160, July 10, 1925.

3. Case of diaphragmatic hernia of stomach (F. C. Arillaga & H. M. Terrada) Rev. Assoc. Med. 2:1466-1469, Dec. 25, 1924. (Illus.)

4. Case of diaphragmatic hernia of stomach, nontraumatic (E. Antoine and A. Bisson) Arch. d. mal. de L'app. digestif 15:147-151, Feb. 1925.

5. Case of true right congenital diaphragmatic hernia (M. Rabbinovitz and L. Zoppino) Schweiz. Med. Wchuschr. 54: 1181-1184, Dec. 18, 1924.

6. Congenital diaphragmatic hernia (Sezary, Baumgartner, Lomon & Jonesco) Bull. et Mem. Soc. Med. d. hop. de Paris, 49:125-130, Jan. 23, 1925.

7. Diaphragmatic hernia (C. Ford) Radiology 5:158-159, Aug. 1925.

8. Diaphragmatic hernia (J. J. Wells) M. J. & Record (Supp) 121:760-761, June 17, 1925.

9. Diaphragmatic hernia after bullet wound of chest (G. W. Christie) Brit. M. J. Mar. 28, 1925.

10. Diaphragmatic hernia; study of 378 cases in which operation was performed (C. A. Hedbloom) J. A. M. A. 85: 947-953, Sept. 26, 1925.

11. Interesting type of diaphragmatic hernia of cardia of stomach through esophageal orifice (J. Friedenvall & M. Feldman) Am. J. M. Sc. 170:263-271, Aug. 1925. (Illus.)

12. Lesions of diaphragm (E. L. Jenkinson) Am. J. Roentgenol. 14:16-19, July 1925.

13. Right sided diaphragmatic hernia; report of case occurring with an intrathoracic neoplasm compressing the right phrenic nerve (J. C. White) Bull. Johns-Hopkins Hospital. 37:203-213, Sept. 1925.

14. Roentgen diagnosis of diaphragmatic hernia (O. Huber) Deutsche Med. & Wchnschr. 51:729-730, May 1, 1925.

15. Symptoms observed in 53 cases of nontraumatic diaphragmatic hernia (T. R. Healy) Am. J. Roentgenol. 13:266-271, March 1925.

16. Traumatic diaphragmatic hernia (J. E. Ohmus. N. Cassio Schecopar & E. Sabate) Semana Med. 2:683-687, Sept. 17, 1925.

17. Treatment of strangulated, gangrenous diaphragmatic hernia (A. Bonniot & P. Maury) Lyon. chir. 22:477-499, July-August 1925.

1924

1. Case of diaphragmatic hernia (E. Key) Zentrabl. f. chir. 51:95-97, Jan. 1924.

2. Case of congenital diaphragmatic hernia (R. Southby) M. J. Australia 1:189-190, February 23, 1924.

3. Case of congenital, right sided, diaphragmatic hernia (R. A. Morrell) Brit. J. Radiol. 29:171-174, May 1924.

4. Congenital diaphragmatic hernia (W. R. Barney & E. H. Evans) Arch. Pediat. 41:720-733, Oct. 1924.

5. Congenital diaphragmatic hernia (E. H. Funk) M. Chir. N. Amer. 8:749-761, Nov. 1924.

6. Congenital diaphragmatic hernia (A. W. Tibbetts) Brit. M. J. 1:236, Feb. 9, 1924.

7. Congenital diaphragmatic hernia (O. W. Swope) Radiology ":260-262, April 1924.

8. Diaphragmatic hernia; case report (M. E. Steinberg & F. B. Patterson) Northwest Med. 23:269-270, June 1924. (Illus.)

9. Diaphragmatic hernia (eventration, true and false hernia) in infants and children (J. H. Hess) M. Clin. N. Amer. 8:567-586, Sept. 1924.

10. Diaphragmatic hernia in a child followed four weeks later by acute intestinal obstruction (M. Behrend) Arch. Ped. 41:408-412, June 1924.

11. Diaphragmatic hernia; nontraumatic (M. J. Biermann) Radiology 3:233-239, Sept. 1924.

12. Diaphragmatic hernia of stomach (R. A. McCobe) Brit. M. J. 2:236-237, Aug. 9, 1924.

13. Early diagnosis of true hernia of diaphragm (O. P. Abbott) J.A.M.A. 83:1898-1899, Dec. 13, 1924.

14. Hernia of stomach through diaphragm (A. Businco & A. Manca) Pliclinico (Sez. Chir.) 31:404-420, Aug. 1924.

15. Operative treatment of diaphragmatic hernia (M. Weichert) Beitr. z. Klin. Chir. 131:180-184, 1924.

16. Operative treatment of diaphragmatic hernias. (M. Makkas) Deutsche Ztschr. f. Chir. 187:246-256, 1924.

17. Parasternal diaphragmatic hernia (C. A. Hedbloom) S. Clin. N. Amer. 4:543-556, April 1924.

18. Recurring hernia of diaphragm (P. E. Truesdale) Ann. Surg. 79:751-757, May 1924.

19. Relaxation vs. hernia of diaphragm (W. Schober) Monatschr. f. Kinderh. 27:520-526, Feb. 1924.

20. Report of case of traumatic hernia of diaphragm (F. F. Borzell) Am. J. Roentgenol. 11:426-429, May 1924.

21. Report of 2 cases of diaphragmatic hernia (J. D. Clark) Am. Jour. Obst. & Gynec. 8:216-218, Aug. 1924.

22. Right diaphragmatic hernia of short esophagus type (S. Fineman & H. M. Connor) Am. J. M. Sc. 167:672-679, May 1924.

23. Roentgen ray diagnosis in diaphragmatic eventration and diaphragmatic hernia, comparison of case of each (D. Ottosen) Hospitalstid 67:465-476, July 23, 1924. (Illus.)

24. Roentgenologic diagnosis of diaphragmatic hernia with report of 17 cases (R. D. Coonan & S. Fineman) Radiology 3:26-45, July 1924.

25. Rupture of diaphragm (A. R. Koontz) Ann. Surg. 80:898-907, Dec. 1924.

26. Strangulated diaphragmatic hernia of stomach (A. Bayley de Castio) Indian M. Gaz. 59:304-305, June 1924.

27. Traumatic diaphragmatic hernia (O. Schumacher) Arch. f. Klin. Chir. 129:782-792, 1924. (Illus.)

1923

1. Diaphragmatic hernia of entire stomach (J. G. Andrew) Brit. M. J. 1:184, Feb. 3, 1923.

2. Combined abdomino-thoracic approach in operations for diaphragmatic hernia (H. B. Stone) Ann. Surg. 78:32-35, July 1923.

3. Congenital diaphragmatic hernia (J. F. Connors & W. T. Robinson) Ann. Surg. 77:725-728, June 1923.

4. Congenital diaphragmatic hernia of right side; its diagnosis in life (P. M. Stimson) Arch. Ped. 40:647-664, Oct. 1923. Also N. Y. State J. Med. 23:408-414, Oct. 1923. (Illus.)

5. Diaphragmatic hernia (T. W. Lipscomb) M. J. Australia. 2:440-442, Oct. 27, 1923. (Illus.)

6. Diaphragmatic hernia (A. T. Mann) Minn. Med. 6:285-290, May 1923. (Illus.)

7. Diaphragmatic hernia (R. J. E. Oden) Ann. Surg. 78: 660-665, Nov. 1923. (Illus.)

8 Diaphragmatic hernia (L. Reich) Wien. Arch. f. inn. med. 6:445-486, July 1923; ab. J. A. M. A. 81:1915, Dec. 1, 1923.

9. Diaphragmatic hernia and relaxation (H. Elias & K. Hitzenberger) Wien. Arch. f. inn. med. 6:437-444, July 1923.

10. Diaphragmatic hernia as consequence of malformation of esophagus (W. Tonndorf) Deutsche Zlschr. f. chir. 179: 259-265, 1923. (Illus.)

11. Diaphragmatic hernia causing pyloric obstruction and fatal tetany. (M. Mitman) Guy's Hosp. Reg. 73:446-447, Oct. 1923.

12. Diaphragmatic hernia, nontaumatic; with report of 4 original cases (E. H. Kessler) J. Radiol. 4:199-202, June 1923. (Illus.)

13. Diaphragmatic hernia of new born (G. C. Adeney) Brit. M. J. 2:415, Sept. 1923.

14. Diaphragmatic hernia of stomach (P. L. Farinas) Am. J. Roentgenol. 10:187-188, March 1923. (Illus.)

15. Diaphragmatic hernia of stomach (Gerin, Luitard & Chauvin) J. de radiol. et electrol. 7:452-453, Oct. 1923.

16. Eventration of diaphragm (D. D. Stowell) Arch. Pediat. 40:407-410, June 1923. (Illus.)

17. Eventration of diaphragm; report of case with unusual findings (A. E. Jaffin & J. A. Honeij) Boston N. & S. J. 188: 593-596, Apr. 19, 1923. (Illus.)

18. Eventration of diaphragm; report of instance and discussion of clinical aspects of anomaly (H. G. Beck) Ann. clin. med. 1:362-371, May 23. (Illus.)

19. False diaphragmatic hernia (O. Wiemann) Arch. f. klin. chir. 125:471-481, Sept. 1923. ab. J. A. M. A. 81:2069. Dec. 15, 1923.

20. Fatal case of acute intestinal obstruction resulting from traumatic diaphragmatic hernia (B. H. Slater, C. Mackenzie & W. M. Eccles) Lancet 1:484, March 10, 1923.

21. Gangrenous perforation of stomach, as a complication of diaphragmatic hernia (G. G. Moppert) J. de chir. 20:453-463, Nov. 1922. ab. J. A. M. A. 80:512, Feb. 17, 1923.

22. Nontraumatic hernia of diaphragm; embryologic viewpoint (L. G. Richards) Ann. Otol. Rhinol. & Laryngol. 32: 1145-1196, Dec. 1923. (Illus.)

23. Strangulated diaphragmatic hernia of traumatic origin with report of case (J. L. Crook) Surg. Gynec. Ocst. 37:185-189, Aug. 1923.

24. Successful operation for diaphragmatic hernia (Muller-Hagen) Arch. f. klin. chir. 127:747-748, 1923.

25. Traumatic rupture of diaphragm in congenital diaphragmatic hernia (G. G. Moppert) Schweiz med. wchnschr. 52: 1205-1207, Dec. 28, 1922.

26. Two cases of traumatic diaphragmatic hernia (J. Garcin) J. de radiol. et d'electrol. 7:177-179, Apr. 1923. (Illus.)

27. Two cases of intraabdominal hernia (E. R. Carling & E. M. Jones) Brit. M. J. 2:1082-1083, Dec. 8, 1923. (Illus.)

1922

1. Diaphragmatic hernia (D. L. Borden) Ann. Surg. Phila. 1922, lxxv, 337-343.

2. A propos du diagnostic des hernies diaphragmatiques. (Bouquet, Masselat & Jaubert de Beaujeu) J. de radiol. et d'electrol. Par. 1922, VI-24-26.

3. Nota intorno ad un caso di eventratio diaphragmatica (G. Covina) Bull. d. sc. med. di Bologna; 1921, Q. S., IX, 317-325.

4. Diaphragmatic hernia; a case report (W. L. Corcoran) West. M. Times, Denver 1921-22, XLI. 306-308.

5. Hernia diaphragmatica congenita spuria sinistra; (J. A. van Dougen) Nederl. Tydschr. v. Genesk, Haarlem. 1922, LXVI, pt. 1, 582-584.

6. Un cas d'eventration diaphragmatique; diagnostic clinique et radiologipue (Fatou & Lafourcade) Bull. et mem. soc. med. d. hop de Par., 3 s., XLVI 505-515, 1922.

17. Ueber hernia diaphragmatica spuria congenita (Frank) Deutche med. wchnschr. Leipz. v. Berl., XLVIII. 145, 1922.

8. Hernia diaphragmatica spuria nach Schussverlitzung (Gobell) Munchen Med. Wchnschr., LXIX. 30, 1922.

9. Sur un cas de hernie diaphragmatique congenitale chez un enfant de trois mois (Lepoutre) Bull. et mem. de soc. de chir. de Paris, XLVIII, 170-177, 1922.

10. Note sur un cas de hernie congenitale du diaphragme (G. Maree) Lyon Chirurg XVIII, 730-740, 1922.

11. Estomac dans le thorax gauche; hernie diaphragmatique (Nalli & Jaubert de Beaujean) J. de radiol. et d'electrol. VI, 184, 1922.

12. Diaphragmatic hernia (B. N. Wade) Northwest Med. Seattle, XXI, 65-70, 1922. Also, Proc. alumni Ass. m. School Univ. of Oregon, Portland, IX, 50-57, 1921.

1921

1. Hernie diaphragmatique de l'estomac et du colon par blessure de guerre, (P. Aime) J. de radiol. et d'electrol. Par; IV, 365-367, 1920.

2. Ueber angebovene Zwerchfellhernien (Aue Deutsche Ztschr. f. Chir. Leipz CIX, 14-35, 1920.

3. A case of diaphragmatic hernia (E. R. B.) Gry's Hosp. Gazette, London. XXXIV, 426, 1920.

4. Congenital diaphragmatic hernia with report of case (L. Frank) Tr. South. Surg. & Gynec. Ass. 1919. Phila. 1920. XXXII, 101-112. 4 pl.

5. A case of diaphragmatic hernia observed post mortem (L. F. Huffman) Ann. Surg. Phila. LXXII. 665-667. 1 pl. 1920.

6. Hernia of the diaphragm (Matthews F. S. & H. M. Imboden) Shid. 668-670. 2 pl.

7. Zur Behandlung der traumatischen Zwerchfellhernie (Orth) Arch f. klin chir. Berl. CXIV, 963-968, 1920.

8. Case of diaphragmatic hernia (R. P. Rowlands) Proc. Roy Soc. Med. London. XIV, Clin. Sec. 34-36, 1920-1921.

9. A case of congenital diaphragmatic hernia (M. Salmond) Mag. Longon. (Roy Free Hosp.) School med. f. women, London. XV, 199, 1920.

10. Due casi di eventratia diaphragmatica (N. Samaja) Bull. d. sc. med. di Bologna 1920, Q. S. VIII, 423-465, 1 pl. La Monovra di Valsalva nell eventratio diaphragmatica. Riforma med. Napoli. 1920, XXXVI, 1151

11. Quelques considerations sur les hernies diaphragmatiques (T. Weiss) Rev. Med. de L'Est. Nancy, 1920, XLVIII, 791-802.

1920

1. Diaphragmatic hernia (M. Andan) J. de radiol. et d'electrol. 3:460, July, Aug. 1919.

2. Diaphragmatic hernia (T. F. Riggs) Ann. Surg. 71:276, March 1920.

3. Diaphragmatic hernia (A. S. MacMillan) Am. J. Roentgenol. 7:143, Mar. 1920.

4. Diaphragmatic hernia (A. D. Bevan) Arch. Surg. 1:23, July 1920.

5. Diaphragmatic hernia (L. Prat) J. de Chir. 16:43, 1920.

6. Diaphragmatic hernia (F. S. Matthews) Ann. Surg. 72:668, Dec. 1920. (J. M. Imboden).

7. Diaphragmatic hernia (P. Aime) J. de radiol. et d'electrol. 4:365, Aug. 1920.

8. Diaphragmatic hernia & gastric ulcer. (V. Hoffman) Munchen Med. Wchuschr. 67:986, Aug. 20, 1920.

9. Case of eventration of diaphragm (W. Allan) Virginia M. Monthly. 47:305, Oct. 1920.

10. Congenital; report of case (L. Frank) Ann. Surg. 71:280, Nov. 1920.

11. Congenital diaphragmatic hernia (O. Aue) Deutsche Ztschr. f. chi. 160:14, Nov. 1920.

12. Congenital diaphragmatic hernia diagnosed during life (M. M. & S. A. Partis) J.A.M.A. 75:1262, Nov. 6, 1920.

13. Eventration of diaphragm (C. Schwenke) Deutsche Med. Wchnschr. 45:1191, Oct. 23, 1919.

14. Observed post mortem. Case of diaphragmatic hernia (L. F. Hoffman) Ann. Surg. 72:665, Dec. 1920.

15. Diaphragmatic hernia of stomach (S. Borling) Brit. J. Surg. 7:539, Ap. 1920.

16. Post operative dilatation of stomach in diaphragmatic hernia (G. A. Pietri) Policlinico (sez. chir.) 27:56, Feb. 1920.

17. Report of case (J. E. Grieve) Arch. Pediat. 37:593, Oct. 1920.

18. Reports of unusual cases with anatomic diagnosis. (N. B. Foster) N. Y. Med. Journal. 112:77, July 17, 1920.

19. Three cases (Cariere & Desplats) J. de radiol. et d'electrol. 4:112, Mar. 1920.

20. Two cases (A. Collard) Arch. med. belges. 72:144, Aug. 1919.

Skeptical Customer—*Can this coat be worn in the* rain without hurting it?

Salesman—*Did you ever see a beaver carrying an* umbrella?—*N. U. Purple Parrott.*

He (over phone)—Is this the Salvation Army?

The Salvationelly—Yes.

He—Do you save bad women?

She—Yes.

He—Well, save me a couple for Saturday night.—*Buffalo Bison.*

"Thanks for the tip," said the Rabbi.

A CASE OF ACUTE GANGRENOUS APPENDICITIS WITH UNUSUAL PATHOLOGICAL FINDINGS

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Although appendicitis is not an unusual phenomenon, and although every practitioner of medicine is relatively familiar with the pathological picture of an acute appendicitis, nevertheless, due to the enormity of size and peculiar characteristics of this specimen, it was thought that in reporting this case, it would purport something of unusual interest to members of the medical profession. A perusal of the literature was made but proved very unsatisfactory. There were several references to

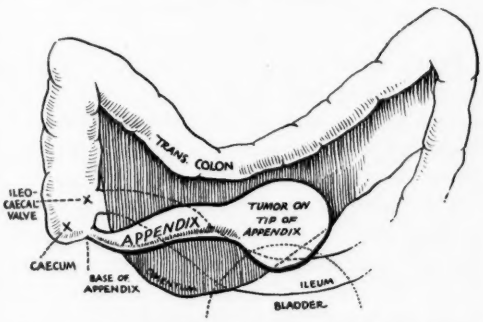

Fig. 1. The omental adhesions covering the appendix were purposely omitted in order that the artist might more clearly show the intra-abdominal position of the appendix.

the mucocele of the appendix as described by Bowman Crowell, but we were unable to find any previous articles on such a pathological picture as we are going to present.

The patient was a young adult male of twenty-two years of age who had been having generalized abdominal pains of a cramping nature for one week beginning approximately on November 17, 1931. He first vomited on November 22, and at this time the pain became localized in the lower right quadrant. This condition persisted until November 24, when he sought medical attention. He was admitted to Wesley Memorial Hospital on November 24. Physical examination revealed a young adult male acutely ill. Temperature was 101.4 and leucocyte count was 23,400. General examination was negative. Abdomen was tender and rigid in the lower right quadrant, but seemed most acutely tender towards the mid line. A diagnosis was made of acute gangrenous appendicitis with abnormal location of appendix.

Under gas induction ether anesthesia a muscle splitting incision was made slightly lower than the customary McBurney incision. Due to inability to see or deliver the appendix, the incision was extended well downwards. The pathological picture that presented is shown schematically in Fig. 1. The omentum was firmly adherent to appendix and could only be freed by severing the omental attachment

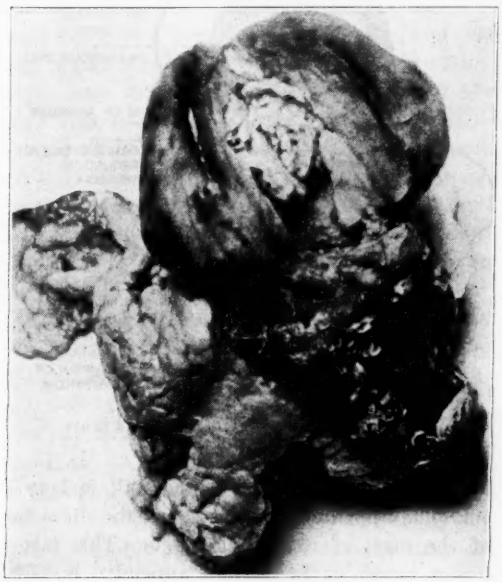

Fig. 2. Photograph of appendix and tabs of omentum. 2/3 actual size.

to the appendix. Once the appendix was freed, large amounts of yellow purulent exudate appeared. The appendix with the large tumor mass at tip was removed by the usual technique. Nine cigarette drains, with gauze removed, were inserted. All layers except skin were closed simultaneously with interrupted catgut sutures. Skin was closed with a few interrupted silkworm gut sutures.

After running a stormy postoperative course, patient was finally discharged on February 23, 1932. He has a persistent fecal fistula which will be amenable to surgical treatment at his discretion. Otherwise, he is

in good health, pursuing his customary duties and has a firm union of the abdominal wall showing no evidence of herniation whatever.

Pathological Report. Gross: The whole mass weighs 180 gms. The calcareous mass measures 2-1/2 cm. diameter by 3 cm. long and is firmly imbedded in the inflammatory mass which surrounds it. The inflammatory mass has a smooth serosal surface but that part of the wall immediately adjacent to the cavity is gangrenous. The diameter of the inflammatory mass is 5 to

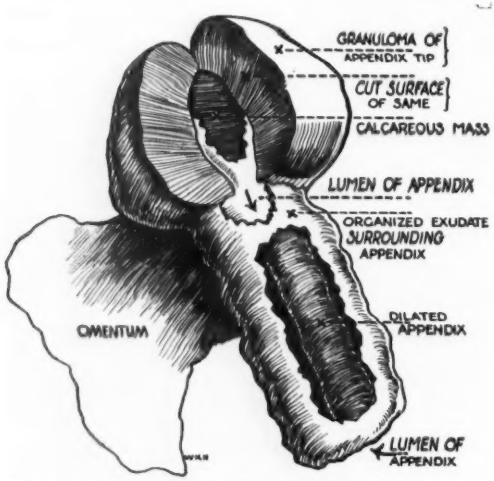

Fig. 3. Diagrammatic explanation of Figure 2.

5-1/2 cm; the thickness of the wall is 1 to 2 cm. The appendix is 8 cm. long; the diameter of the mass of exudate is 4 cm. This latter has a rough surface. The appendix is filled with necrotic and hemorrhagic material and a large piece of omentum is adherent to it.

Microscopic: Sections from all parts of the specimen show high grade chronic inflammation with recent acute gangrenous process superimposed. Sections from the calcareous mass show irregular calcification of a necrotic debris without definite bone formation.

Pathological Diagnosis: Chronic nonspecific granuloma of appendix, acute gangrenous inflammation superimposed, calcified foreign body in lumen.

Summary: We have presented an unusual pathological picture. Conclusions drawn from the processes present would indicate the following sequence of events. At some time, probably several years back, the appendix had presumably ruptured at the tip leading to abscess formation. This was followed by fatty infiltration and calcification of the pus present, and a transition from acute to chronic inflammation in the abscess wall. The chronic inflammatory state persisted for several years and finally, about one week before the patient sought medical attention, the acute process became superimposed.

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THE TREATMENT OF PEPTIC ULCERS WITH AN EVAPORATED MILK DIET

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Peptic ulcer occurs in the regions subjected to the pepsin and hydrochloric acid of the gastric juice, which includes the stomach, duodenal cap, duodenum and jejunum, and sometimes other portions of the tract.

The cause of gastric and duodenal ulcers as they occur clinically has not been satisfactorily established. It is probable that ulcer is not the result of a single process but that there are many factors involved in its formation. Among the various possibilities which have been named as factors in the cause of ulcer are general lack of resistance, injury or disease to the mucosa, the digestive action of the pepsin and hydrochloric acid of the stomach, increased nervous tension, bacterial infection, toxic manifestations and constitutional predisposition.

Gastric and duodenal ulcers are found most frequently in young and adult middle life. Ninety per cent of these ulcers are at the pylorus or on the first two inches of the lesser curvature.

Peptic ulcers are of two types, acute and chronic. Acute ulcers occur most commonly in the course of some acute infection or chronic wasting disease, and usually give rise to no symptoms. In a few cases they perforate, and in some they lead to hemorrhage. An acute ulcer may go on to chronicity.

The symptoms of the typical cases of peptic

ulcer are as follows: pain or epigastric distress about two or three hours after eating. There is a sense of irritability with this pain which is sometimes accompanied by nausea, eructation, or vomiting. There is a soreness or tenderness which lasts until the next meal, that may be relieved by vomiting or the taking of food or alkalis. There is often constipation, loss of weight, and anemia in women. There is usually a high acidity of the gastric contents, the presence of blood or occult blood in the feces, and the positive thread test.

Roentgen ray examinations are of great assistance in discovering the location and type of ulcer as well as the presence of complications. It furnishes a means of deciding the progress of the ulcer, whether it is healing, recurring, or whether surgical interference is necessary.

Cases of peptic ulcer without complications require operations only when medical treatment has failed. Indications for surgical treatment are perforations, cicatrical pyloric stenosis, organic obstruction, repeated hemorrhages, suspected malignancy, and severe pain or discomfort.

The surgical method employed depends upon the conditions found. The types of operations most commonly used are gastro-enterostomy, pyloroplasty, and resection.

The medical treatment of peptic ulcer consists of rest, removal of all focal infections, and a carefully selected diet. Since focal infection is a probable factor in the cause of ulcer, all sources of it should be removed before treatment is begun. The teeth and mouth should receive scrupulous care. Complete rest in bed should be maintained. The patient is put upon a milk diet as soon as the symptoms of ulcer appear. The temperature of the food must not be too hot nor too cold. The presence of free hydrochloric acid is the cause of distress in peptic ulcer without complications, and relief is accomplished by methods that neutralize, combine or remove the hydrochloric acid from the ulcer-bearing region. Neutralization of this acid by the hourly or two-hour administration of milk as well as by alkalis promotes the healing of ulcers in many cases.

Where hemorrhage is present, the patient should not be allowed to leave his bed. Nourishment by mouth is not permitted. When necessitated by the enfeebled condition of the patient, nutrient enemas must be employed for from three to five days.

There are four plans of treatment which may then be given, and which may be applied immediately to uncomplicated cases. They are the Lenhartz cure, the Leube cure, the Smithies cure, and the Sippy cure.

The Lenhartz treatment consists of rest in bed for four weeks at least. He believes it best to prescribe protein food to overcome hyperacidity and the enfeebled state which accompany ulcer. The treatment is typical only during the first two weeks. The first day two eggs are given, beaten up with sugar, and one egg a day is added until the patient is eating eight eggs daily. The eggs are taken for the high caloric value. Milk is given daily in increasing amounts. By the end of the first week 70 gm. of raw beef is allowed daily. By the tenth day rice, zweiback, raw ham, butter and milk are added. Bismuth subnitrate is given from the beginning and continued for ten days.

The Leube treatment requires rest in bed for fourteen days upon a liquid diet, mainly milk. A hot poultice is applied to the epigastrium for the first few weeks, and a half pint of Carlsbad water is given an hour before breakfast. After two weeks soft food is added to the diet, although it still consists mainly of milk, and after the fourth week the easily digested vegetables in the puree form may be allowed.

Smithies uses neither alkalis nor milk. He tries to induce in the stomach a state of physiologic rest; no food is given by mouth for from four to seven days. The patient remains in bed. Paraffin wax is chewed and rectal feeding instituted. When mouth feedings are begun, a diet of barley water, rice gruel, thin creamed vegetable soup, etc., is prescribed, as carbohydrates leave the stomach the quickest. Belladonna or bromides are sometimes given.

The Sippy treatment has yielded gratifying results. The method of treatment is to promote the healing of the ulcer by shielding it from the acid corrosion. Protecting the ulcer from the corrosive effect of the gastric secretion is effected by maintaining a neutraliza-

tion of all free hydrochloric acid from early in the morning until late at night. This is accomplished through the free and frequently repeated administration of alkalis and frequent feedings. The patient rests in bed for from three to four weeks. The diet at the beginning of the treatment consists of three ounces of a mixture of equal parts of milk and cream given every hour from 7 A.M. to 7 P.M. After three days, three softboiled eggs and well-cooked cereal, with the milk and cream mixture every hour, are given each day. Powders of magnesia and soda alternated with powders of calcium carbonate and soda are given to neutralize the acid.

Aspiration of the stomach contents is done at various periods of the day three times a week until the results show the acidity is neutralized and there is no residue.

After four weeks of this treatment an increase to three small meals daily is made with milk and cream mixture hourly and alkalis half-hourly as before. The meals consist of toast, cream soups, eggs, mashed potatoes, cooked fruits, cooked tomatoes, spinach, custards, cereals, gelatin, whipped cream desserts. Aspirations should be done monthly. Beginning with the tenth week the alkalis must be stopped for five or six days every six weeks.

The first requirement in the treatment of chronic ulcer is rest in bed. If there is hemorrhage, the patient should receive no nourishment until the hemorrhage ceases. An ice bag or cold compress may be applied to the epigastrium for three hour periods, and removed for intervals of one hour. Small amounts of cracked ice may be given to allay thirst. The Murphy drip method may be used to supply fluids, giving a pint of plain water, normal salt solution, a weak soda solution, or ten per cent glucose solution two or three times every twenty-four hours.

The diet is the most important part of the treatment. It is necessary to neutralize, combine, or remove the hydrochloric acid from the ulcer-bearing area to gain relief. The diet should be of such a nature as to not stimulate the gastric secretion and cause further irritation. It should contain a sufficient caloric value and a high vitamin content. It must be given in small amounts at frequent intervals.

In the course of treatment of ulcer patients I have prescribed evaporated milk in the diet in place of fresh milk and cream with very satisfactory results.

The processes of homogenization and sterilization which evaporated milk receives serve to break down the fat globules and to make the protein more digestible. Also, the protein loses some of its toxicity. The curds which form in the stomach are small and flocculent, therefore less irritating to the stomach than the large tough curds resulting from fresh milk. The fine fat globules expose a larger surface to the action of the fat digesting enzymes. There is no irritating effect of free fatty acids.

The calcium of evaporated milk is rapidly available and the retention is better than fresh milk as it contains no lactic acid bacillus to increase acidity.

Evaporated milk contains all the vitamins which bottled milk is depended upon to supply. The caloric value is 43 to the ounce. It is of uniform composition, easily obtainable, cheap, and sterile. There is no chance of bacteria entering the stomach in the milk to aggravate the condition.

In cases of peptic ulcer it is necessary to give small amounts of food at frequent intervals. Evaporated milk, having twice the concentration of fresh milk, and being readily assimilated with no irritation to the stomach, may be given in the same quantities as fresh milk, or even larger ones, and has the advantage of possessing more food value and mineral contents. It is unnecessary to add additional fat in the form of cream to increase the caloric content.

I have found that some patients who have an allergy to fresh milk are tolerant to evaporated milk.

It is necessary, as a rule, to administer alkalis with the milk diet. Bismuth and anesthesin may be prescribed as an anodyne.

Case 1. Marshall G., 36 years old, had had tonsillitis when he was 17 years old. His tonsils were removed when he was 25. Shortly afterward he had epigastric distress after eating for a period of two weeks. From that time on he had a period of epigastric pain every spring. They appeared two hours after eating, were relieved when he ate or by vomiting and gradually became more severe.

He consulted me in June, 1931. The test for occult blood in the stools was positive. There was a high hydrochloric acidity. He was ordered to bed immediately, put upon an evaporated milk diet, and given alkalis. He

received three ounces of evaporated milk every two hours from 7 A.M. to 7 P.M. After three days he was given a coddled egg, and some well-cooked cereal, with the evaporated milk every two hours. The eggs were gradually increased until he received six a day. A week later he was put on a restricted diet. The evaporated milk was continued in the same amounts.

He was permitted to get up after a week in bed, but remained on a restricted diet. He has had no symptoms since that time.

Case 2. John McC., 51 years old, had complained of heartburn and occasional pains three hours after eating for a period of six years. These had been relieved by the taking of food. When he was 47 years old he began to awaken at night with severe pains. He lost 45 pounds of weight in two years, and began to have weak spells and faint. The stools were black.

He consulted me in March, 1930. He was ordered to bed immediately, and received no food by mouth for three days. Nutrient enemas were employed. Bismuth subnitrate and anesthesin were given. The fourth day he was given one ounce of evaporated milk every two hours. The fifth day, in addition to the milk, he received a coddled egg. From that time on, the amount of eggs was gradually increased until he received eight coddled eggs a day. On the sixth day the evaporated milk was increased to two ounces every two hours. After two weeks he was put on the restricted diet, continuing with the same amount of evaporated milk. The third week he received three ounces of evaporated milk every two hours. He improved rapidly, gained weight, remained on a careful diet, and has had no return of symptoms.

Case 3. Marion W., 19 years old, consulted me in December, 1930. She was pale and weak. She complained of dizzy spells, constipation, and nervous exhaustion. I found she was anemic. She complained of occasional heartburn, but had no epigastric pain except on pressure. At times she had a pain in her back which was relieved by eating. Her stools contained occult blood.

She was put to bed and received two ounces of evaporated milk every two hours. After two days she also received a coddled egg and cereal, and after a week was put on a restricted diet. The evaporated milk was increased at that time to three ounces every two hours. She has continued on a careful diet and has had no return of symptoms.

Case 4. Arla J., 35 years old, had infected teeth and pyorrhea. She had complained for the last three years of eructations, nervousness, and epigastric pain two hours after meals. Her pain was relieved by eating. She awakened one night with an extremely severe abdominal pain. This subsided after she had applied a hot poultice and vomited ½ pint of coffee-ground fluid which was very acid.

She consulted me the next day, which was in November, 1931. She was ordered to bed, and received no food for three days. Bismuth subnitrate in dram doses was prescribed. On the fourth day she was given one ounce of evaporated milk every two hours. The next day this was increased to two ounces every two hours. On the sixth day she was given a coddled egg, and the amount of eggs was gradually increased until she was receiving eight. The milk was continued in the same amount. She was put on a restricted diet on the eighth day, and the evaporated milk was increased to three ounces every two hours.

She had her teeth and pyorrhea attended to, and having adhered to a careful diet has had no symptoms since.

Case 5. Louis B., 32 years old, consulted me in August, 1930. He complained of heartburn, occasional vomiting, hyperacidity, constipation, and loss of weight for the past two years. I found a chronic appendicitis. The patient was ordered to bed, given the evaporated milk diet and alkalis, and later a restricted diet. The symptoms disappeared and I advised removal of the appendix. The patient refused to have the operation.

He remained free of ulcer symptoms for eight months, when he again consulted me, having a recurrence of his previous symptoms. He was again put under the same treatment, and gained relief. Two months later I removed the appendix. He has remained free of symptoms since that time.

CONCLUSIONS

1. The etiology of Ulcer is still unknown.
2. The Lenhartz, Leube, Smithies and Sippy treatments have given good results.
3. The use of evaporated milk in the place of other forms of milk in ulcer diets is believed to be a further advance because of the following advantages: easily digested, it contains no lactic acid bacilli, it is concentrated, and it is sterile.
4. The five cases reviewed using an evaporated milk diet have all shown rapid improvement and uneventful recovery.
5. I believe this modification of the usual ulcer diet merits further investigation.

2030 Irving Park Blvd.

RADICAL MASTOID OPERATION WITHOUT PLASTIC SURGERY*

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In the early nineties of the last century the radical mastoid operation was placed on a scientific basis by the masters Zaufel, Jansen and Stacke; yet the decade had not passed when modifications were urged by other prominent specialists. Chief among these was Korner who in 1899 stated that in certain patients in whom the preservation of hearing is at stake, the operation may be modified so as to leave the ossicles and the drum membrane intact. In 1906, Bryant, of this country, and Heath, of London,

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again brought to attention modifications of the radical mastoid operation which were designed to preserve, if not to improve, the hearing function. Barany visited Chicago in 1920, and in several of his talks recommended his modification of the radical mastoid operation. This was essentially the classical mastoid operation without plastic flaps, in which middle ear parts were either removed or left alone. So far as I can determine it differed very little from the operation advised by Korner in 1899. However, Barany claimed that all the hearing present at the time of operation was retained for a longer period, even though the aural discharge was only moderately improved.

In 1912, at the International Congress of Otologists in Berlin, Kopetzky read a critique establishing the following claims:

First: That the simple mastoid operation if performed on the same class of patients would yield as good results, so far as hearing is concerned, as does the modified radical operation, and would also better meet the surgical indications.

Second: That the modified operation does not meet any of the requirements of the radical operation.

Third: That in chronic suppurative otitis media of long duration the modified radical operation cannot, from a scientific standpoint, restore to functional activity a diseased ossicular chain or heal necrotic areas in the annulus tympanicus, in the tympanic, adital, or antral walls.

Fourth: That as a substitute for the simple mastoid operation the modified radical operation offers no advantage.

Similarly, in a symposium on radical mastoid surgery conducted in London and reported in the proceedings of the Royal Society of Medicine, Heath's two modifications of the radical mastoid operation were discussed. Both were severely criticized, and Heath was accused of having re-discovered the earlier Stacke and Kustener operations. The hope was expressed that he would soon re-discover the typical radical mastoid operation.

About eleven years ago Dr. Norval Pierce brought to our attention the inadequacies of the classical radical mastoid operation, and focussed our attention particularly to the frequent persistence of aural suppuration following the operation. He felt constrained to present a new operation, whereby the Eustachian tube was better dealt with in the attempt to keep it closed. In the following year Watson of Edinburgh reported on eighty-four consecutive cases operated on by Drs. A. Logan Turner and J. S. Fraser and others. Watson stated that while the percentage of dry ears was greater following the radical operation, the hearing was better in those who had modified operations.

Thus in the last four decades there has not been a unanimous acclamation of the radical mastoid operation, while at the same time modifications have met a most unfriendly reception. The chief drawback of the former is the subsequent loss of hearing in some percentage. The objection to the latter is persistence of the discharge.

During the past ten years I have tried to deduce from my own experiences which procedure more adequately serves the best interests of the patient and still takes cognizance of the two opposite prevailing viewpoints. There is no denial of the fact that the radical operation is likely to be followed by a loss of hearing. This is not necessarily true of the modified radical. The following case is an exceptional opportunity for comparing these two operations as done on one patient:

Case 1. R. S., a 10 year old boy, was admitted to the hospital on September 10, 1930, with discharge from both ears for the past four years. There were pain, headache, and swelling about the right ear of four days duration. There were also tenderness over the mastoid and a swelling in the canal, localized to the posterior wall; the latter was thought to be an inflammatory swelling about a fistula. A modified radical operation was performed. Outside of the usual immediate post-operative management no further treatment was given.

Nine months later the boy was re-admitted to the hospital for treatment of the other ear. Because of the history of a discharge for five years despite persistent treatment, and x-ray evidence of bone necrosis, a colleague performed the usual radical operation with a plastic flap. A review of the facts in the subsequent course of this patient shows the following: First, both ears are dry and have been since the operations; second, the right ear, which was operated on first without the plastic at the time of the first operation, was definitely the poorer ear functionally; third, at the present time we find that the right ear has retained its hearing after a year and a half, while the left ear, after only ten months, shows loss of perception of the higher tones. so marked that the right ear is now the better one.

On several occasions I have performed the simple mastoid operation on patients with chronic otorrhea, but frequently I have met with disappointment, as the aural discharge continues unabated and resists the most assiduous treatment. The following case is a typical example:

Case 2. R. H., at the age of 3 years gave a history of otorrhea for two years. For the last six months a competent otologist had carried out active treatment without results. An extensively thorough simple mastoid operation was performed. The discharge persisted after operation for one year, despite most careful treatment. Occasionally there seemed to be improvement for three to five days, but the relapse was complete.

I have also had occasion to observe the results of the simple operation performed by others under similar conditions. The following two cases show the inadequacies of these operations, and at the same time they show conclusively that the modification may result in a controllable slight otorrhea while all the hearing is preserved.

Case 3. M. B., aged 14 years, had a simple mastoidectomy six years before coming to us. The following year the otologist was constrained to repeat the operation. We saw the patient with a foul-smelling discharge and a fluctuating swelling over the mastoid. A modified radical was performed in October, 1930. With the usual medical after-care the ear has remained practically dry to date.

Case 4. C. B., 10½ years of age. Two years before seeing us a simple mastoidectomy was performed at Cook County Hospital. The discharge persisted after the operation for one year, despite treatment, when a fistula in the wound was formed. This suppurated continuously for another year, at which time we performed a modified radical operation. We have treated the ear very little since, except for superficial cleaning, but we have watched the progress very carefully. I can say at this time—nine months after the patient's discharge from the hospital—that there has never been more than a slight amount of mucus discharge obtainable by swabbing. The hearing has been totally preserved.

The following case is typical in demonstrating the preservation of hearing.

Case 5. S. S., 13 years of age, who was operated on a year and a half ago, shows about the same degree of hearing now as he did at the time of operation. Also, there is only the slightest amount of mucus discharge persisting.

Every once in a while we are confronted with a patient with a bilateral, chronic, aural discharge, who comes for some reason for operation, and upon investigation we learn to our chagrin that the ear to be operated on is functionally the more useful one.

The cause for discrepancy in the two ears is often due to the fact that the simple mastoid operation has previously been done on the ear which still functions. In this type of case it requires great courage to do a classical radical operation, since the danger of losing the remaining hearing is great, especially in children. If, after the operation, more hearing is lost, the child who has not yet finished his education may lose his power of speech to a marked degree and suffer in general from the handicaps of the totally deaf. I have treated several such children after a modified radical operation had been done, and have found again little change in the hearing. Even if the discharge cannot be totally cured it can be reduced to such an extent that neither the quantity nor the odor is particularly objectionable to the patient or his family.

CONCLUSIONS

1. The modified radical operation does not result in as great a menace to the hearing function as does the classical radical.

2. The persistence of otorrhea after a modified radical operation may very often be satisfactorily controlled by conservative treatment.

3. Frequently the simple mastoid operation does not accomplish what the modified operation does in a chronic case.

4. It is not a disadvantage to perform a modified operation in a questionable case, because it does not conflict with the subsequent performance of the classical radical mastoid operation if this becomes indicated.

5. Persistent treatment after the modified radical operation has been performed will influence very favorably the course of the disease.

30 North Michigan Ave.

DISCUSSION

Dr. A. R. Hollender, Chicago: I am prompted to discuss this paper because I have had occasion to observe the essayist's work. I have consistently followed the cases which he has cited. Because of the end results obtained in those cases which were selected for the radical mastoid without plastic flap, I am strongly in favor of this operation. I appreciate the fact that circumstances alter the indications, and that many times the type of operation will depend upon individual factors. It is for these reasons that the essayist emphasizes the necessity of careful selection of cases.

There can be little argument concerning the extreme importance of preserving the hearing function, particularly when there is a definite loss of hearing in both ears. One must choose between the two evils, an impaired hearing or a persistence of the discharge. The lesser one seems to be the aural discharge.

The secret of a satisfactory final result is the postoperative management of the otorrhea. The essayist has purposely refrained from elaborating on the recent advancements on this subject. It is not especially pertinent to this paper, yet one's preference for one or the other of the surgical procedures would be materially influenced if the prognosis, so far as the otorrhea is concerned, was favorable.

One must be prepared to meet this situation after the modified operation is performed. It requires conscientious effort to effect a result with which the patient is satisfied. So long as the modified operation removes the danger of intracranial complication, and this appears quite likely, and at the same time preserves what remains of the hearing function, this procedure merits consideration. The indications should not be confounded with those for the simple and more radical mastoid operations. It is simply a matter of recognizing that a more conservative procedure is available and that it meets adequately the needs of a definite group of patients.

The essayist should be commended for presenting this subject. The otologist is always interested in progressive work in the specialty, and to my mind Dr. Cottle has demonstrated a keen sense of observation and thought on this problem of radical mastoid surgery.

Dr. James W. Sanders, Decatur: I should like to ask Dr. Cottle whether he has had any experience with x-ray therapy in these cases, and if he has, has it lessened the discharge after operation.

Dr. George Woodruff, Joliet: If I understand this correctly, Dr. Cottle's modification consists in doing the classic radical with the exception of the plastic flap. If that is the case, I wonder how he explains the retention of hearing, or what procedure he makes a practice of following in these cases.

Dr. Maurice H. Cottle, Chicago (closing): This operation is not my modification. I have not made the attempt to remove every single remnant of drum membrane, for example, or a necrotic malleus.

I have had no experience in treatment of aural discharge with x-ray.

THE USE OF CONVALESCENT SERUM AND HUMAN BLOOD IN SUSPECTED POLIOMYELITIS*

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Since 1910 Flexner and others have demonstrated experimentally that the blood serum of human beings and monkeys convalescent from poliomyelitis has definite antiviral properties. Shaughnessy, Harmon, and Gordon and others have also shown experimentally that the serum from persons who have been in contact with frank cases of poliomyelitis, and the serum from normal adults never in contact with known cases of the disease, have a power to neutralize active poliomyelitis virus at least equal to that derived from persons who have recovered from an attack of the disease. The efficacy of convalescent serum and normal human serum has been difficult to establish beyond peradventure clinically. Numerous workers have given these laboratory results extensive clinical trials. Most of them are of the opinion, that because of its laboratory background, and in view of the apparent harmlessness of such therapy, its use should be continued.

In 1931 through the diligence and cooperation of the State Department of Health, convalescent serum was made available to the physicians of Illinois. My limited experiences with the use of the serum and human blood in cases of suspected poliomyelitis are presented in this paper.

CASE REPORTS

1. September 3, 1931. B. W. Female. Aged 7 years. Headache and vomiting of 4 days duration. Rigidity of the neck and spastic paralysis of both legs, and the right arm today. Marked general dehydration. Temperature 101 deg. F. White blood count 19,325. Lumbar fluid clear, pressure 8 mm. Hg.; cell count 135. Because of the extensive paralysis no serum was given. Treatment consisted of the administration of salt solution intraperitoneally, and repeated spinal drainage until the acute illness had subsided. This child has been under the care of a competent orthopedist, but she has yet to recover from a great deal of her paralysis. The case is reported for the comparison of its clinical findings with those of the others.

2. September 4, 1931. P. F. Female, Aged 5 years. Pain in the back of the neck, drowsy, vomiting and diarrhea of 24 hours duration, following a sudden onset with a chill. Neck resistant to flexion. Temperature 104 deg. F. Lumbar tap dry. Cisterna fluid clear, pressure 20 mm. Hg.; cell count 2 lymphocytes. 20 cc. of convalescent serum were administered intramuscularly. Six hours later the patient's temperature rose to 106 deg. F., and then following a profuse sweat, dropped to normal. She made a rapid recovery, with no paralysis.

3. September 12, 1931. L. L. Male. Aged 4 years. Headache and vomiting during the night. Two convulsions this morning. Quite drowsy. Neck and knees rigid. Temperature 103 deg. F. Lumbar fluid clear, pressure 28 mm Hg.; cell count 2 lymphocytes. 20 cc. of convalescent serum were given intramuscularly. A rapid recovery followed. No paralysis.

4. September 16, 1931. M. H. Female. Aged 7 years. Headache, abdominal pain, diarrhea and drowsiness of 12 hours duration. Temperature 103 deg. F. Neck resistance to flexion. Lumbar fluid clear, pressure 20 mm. Hg., cell count 2 lymphocytes. 20 cc. of convalescent serum were given intramuscularly. A rapid recovery. No paralysis.

5. September 18, 1931. J. R. Female. Aged 6 years. Irritability and drowsiness. Duration 24 hours. Temperature 103 deg. F. Neck and spine signs positive. Lumbar fluid clear, pressure 12 mm. Hg., cell count, 3 lymphocytes. 20 cc. of convalescent serum were given intramuscularly. A rapid recovery. No paralysis.

6. September 19, 1931. J. W. Female. Aged 15

*Read before Section on Medicine, Illinois State Medical Society, Springfield, May 19, 1932.

months. Sudden onset of a high fever and a convulsion this morning followed by drowsiness. Temperature 103 deg. F. Patellar reflexes absent. Neck and knee reflexes uncertain. Jerking and twitching of the right leg. White blood count 7,600. Lumbar tap dry. Cisterna fluid clear, pressure 20 mm. Hg., cell count 11. 20 cc. of convalescent serum were injected intraperitoneally. A rapid recovery. No paralysis.

7. September 23, 1931. A. A. Male. Aged 5 years. Headache, sore throat and vomiting the past 3 days. Drowsy today. Temperature 105 deg. F. Neck and spine signs positive. Lumbar fluid clear, pressure 24 mm. Hg., cell count 1 lymphocyte. Three successive doses of 20 cc. of convalescent serum were administered intraperitoneally at 12 hour intervals. A complete recovery followed a weeks convalescence. No paralysis.

8. October 3, 1931. K. M. Male. Aged 22 months. A coryza, vomiting and diarrhea 8 days ago, of 3 days duration. Better for 5 days. Left leg paralyzed (flaccid) today. Temperature 101 deg. F. Lumbar tap dry. Cisterna fluid clear, pressure 10 mm. Hg., cell count 126, 83 per cent lymphocytes. Three intraperitoneal injections of 20 cc. of convalescent serum were given at 12 hour intervals. After which the patient was paralyzed from the waist down. Only about one-third of the paralysis has disappeared when this was written.

9. October 6, 1931. K. B. Male. Aged 20 months. Vomiting and diarrhea of 24 hour duration. Drowsy. Temperature 102 deg. F. Lumbar tap dry. Cisterna fluid clear, pressure 12 mm. Hg.; cell count 2. 20 cc. of convalescent serum were given intramuscularly. The following morning the patient was still drowsy. His whole body seemed tense. Lumbar fluid turbid, pressure 20 mm. Hg., cell count 2,000. 30 cc. of spinal fluid withdrawn. Because of the high cell count, 15 cc. of antimeningoccic serum were given intrathecally. The patient's condition seemed no better the following day. Because no organisms were found, and because but 5 cc. of lumbar fluid were obtained, no more antimeningococcic serum was given. Not wanting to use the convalescent serum unnecessarily, 50 cc. of the father's whole blood were injected intraperitoneally. Encouraged by a distinct improvement in the patient's condition, 25 cc. of the father's blood were administered intraperitoneally, each of the following two days. A rapid recovery followed. No paralysis.

10. October 9, 1931, D. E. Male Aged 3 years. Headache, abdominal pain, and vomiting of 3 day's duration. Very drowsy the past 24 hours. Reflexes diminished. White blood count 9,150. Lumbar fluid clear, pressure 12 mm. Hg.; cell count 37, polymorphonuclears 80 per cent. 20 cc. of convalescent serum were given intraperitoneally. Twelve hours later the patient was still drowsy, and the lumbar fluid cell count was 105. Two more doses of convalescent serum were given intraperitoneally. The patient rapidly recovered. No paralysis.

11. October 11, 1931. D. B. Female. Aged 3 years. Vomiting, restless and irritable during the night. A convulsion this morning. Now drowsy. Temperature 105 deg. F. Neck and spine signs positive. Lumbar fluid clear, pressure 12 mm. Hg.; cell count 2. 20 cc. of convalescent serum were given intraperitoneally. Eight hours later the lumbar fluid was turbid, pressure 12 mm. Hg.; cell count 6,374, polymorphonuclears 91 per cent. No organisms were found. 20 cc. more of convalescent serum were injected intraperitoneally. The following morning the child's general condition appeared no better, but the lumbar fluid cell count was 3,355. 60 cc. of whole adult blood were administered intraperitoneally. The patient's condition seemed much better the next day. The lumbar fluid cell count was 1,150. 50 cc. more of adult blood were given intraperitoneally. The following day the spinal fluid cell count was 144. From then on the patient made an uneventful recovery. No paralysis.

12. October 15, 1931. M. S. Female. Aged 6 years. A coryza and cough the past week. Vomiting and diarrhea the past 2 days. A severe headache this morning. Neck and spine signs positive. Temperature 103 deg. F. White blood count 27,000. Lumbar tap dry. Cisterna fluid turbid, pressure 12 mm. Hg., cell count 126. 50 cc. of the father's whole blood were given intraperitoneally. The child remained drowsy and vomited frequently during the day. Eight hours later the lumbar fluid was turbid. The cell count was 3,200 (polymorphonuclears 95 per cent). No organisms were found. 15 cc. of antimeningococcic serum were administered intrathecally. The patient sweat profusely through the night. The following morning her condition seemed better. The white blood count was 35,000. The cisterna fluid was turbid; the cell count was 1,713. 45 cc. of cisterna fluid were slowly withdrawn. Because of the improvement in the patient's condition and the uncertainty of the diagnosis, 30 cc. of antimeningococcic serum were administered intracisternally, and 50 cc. of the father's whole blood were injected intraperitoneally. The next day the child's condition seemed much better. But 3 cc. of lumbar fluid were obtained; cell count 1,200. The following day 45 cc. of clear lumbar fluid were removed, cell count 635. Except for a serum reaction one week later, the patient made an uneventful recovery. No paralysis.

13. October 10, 1931. L. M. Male. Aged 7 years. Headache and vomiting of 3 days duration. Quite irritable and drowsy the past 24 hours. Temperature 105 deg. F. Neck and spine signs positive. Lumbar fluid clear, pressure 16 mm. Hg.; cell count 230. Because no convalescent serum was at hand, 25 cc. of the father's whole blood were given intraperitoneally. Two intraperitoneal injections of 20 cc. of convalescent serum were given the next day. A rapid recovery followed. No paralysis.

14. October 16, 1931. E. F. Female. Aged 4 years. Felt bad one day a week ago. She then seemed all right until last night. Cried with pain in her back during the night. Temperature 101 deg. F. Neck and spine signs positive. Lumbar and cisterna taps dry. 20 cc. of convalescent serum were given intraperitoneally. Eight hours later 30 cc. of clear lumbar fluid were obtained, pressure 28 mm. Hg.; cell count 165, 20 cc. more of convalescent serum were given intraperitoneally. The following morning the child was still quite irritable and spastic, and was vomiting. 20

cc. more of convalescent serum were given intraperitoneally. The patient then made a rapid recovery. No paralysis.

DISCUSSION

The cases herein reported although small in number, do portray the clinical signs and symptoms one finds in cases of preparalytic poliomyelitis. They also illustrate the diagnostic difficulties one encounters in this type of cases. One may make a definite diagnosis of poliomyelitis in only the two cases which were and are paralyzed. The two cases with such extremely high cell counts were very probably meningitis rather than poliomyelitis. It is of interest, however, that one of them cleared up entirely with no other therapy than convalescent serum and adult blood. In my opinion, the important point in both cases is that they were treated early. Just how many of the ten others were cases of preparalytic poliomyelitis, I do not know. Nor do I know how many of them, if any, would have become paralyzed, if they had not received the serum or blood therapy.

Experimental and clinical pathology is teaching us that acute poliomyelitis is primarily a systemic infection which involves the central nervous system in only a small proportion of cases. "Flexner and Amoss have demonstrated that under normal conditions, the tissues of the choroid plexus and meninges possess a definite barrier-like power for excluding from the spinal fluid foreign substances or toxins circulating in the blood. Their experiments clearly indicate that an inflammatory reaction involving the delicate meningeal and choroid structures diminishes or destroys the defensive mechanism. It appears that injury to the meningo-choroid tissues is necessary to produce the fully developed disease."[1] The earliest changes are a hyperemia in the meninges, the cord, and the brain. These first changes are not associated with fibrin formation or with any cellular exudate. At this stage, one obtains on spinal puncture, an increased pressure and volume, but no increase in cells. Further progression of the disease results in an edema, a cellular exudate, and punctate hemorrhage in the cord, and possibly in the brain. One then finds on spinal puncture, a decreased pressure and volume, and an increased cell count.

Whether the apparent beneficial results that follow the clinical use of convalescent and human serum are due solely to specific antiviral potency, or whether they are partially or wholly due to a non-specific protein effect remains to be determined. Whatever its virtue, extensive clinical experiences of various observers have shown that to be of any real value, the serum must be given before the virus has involved the central nervous system. We are told that "the establishment of the diagnosis of acute poliomyelitis during the preparalytic stage is essential for the prevention of the dreaded incapacitating sequellae of the disease."[2] But for the average physician that is easier said than done. It seems to me that if any material progress is to be made in the prevention of these dreaded sequellae, some method should be adopted which the rank and file of the profession can utilize. There is no definite way of differentiating preparalytic poliomyelitis from a meningismus, or an encephalitis, or occasionally a meningitis. The history, the clinical signs and symptoms, and the spinal fluid findings are suggestive. But the fact remains, that one cannot without fear of contradiction diagnose acute poliomyelitis without the presence of paralysis. I believe that instead of waiting to make a definite diagnosis in each case before instituting therapy, one should have in mind prevention rather than specific treatment. For example, during "poliomyelitis season" (May to November) and especially during an epidemic, one should perform a spinal puncture on each patient that shows signs of meningeal irritation. If one finds an increased pressure and volume, or an increased cell count, would it not be sound prophylactic therapy to administer convalescent serum or adult blood until its further use is contraindicated? In emergencies one might be justified in administering serum or blood without waiting for the spinal fluid findings. It is true, perhaps, that many of these children would escape paralysis, with no treatment, or with spinal drainage. But how are we to know which one will, and which one will not? We do not withhold the administration of antitetanic serum to an individual with a dirty wound, because we are not certain that he would develop tetanus. Nor do we wait for a positive culture before administering antitoxin to cases of suspected diphtheria. The fact that one might not be justified in quarantining mild cases, may be considered an objection to such a procedure. However our present methods

of quarantine are far from satisfactory. Draper[3] has pointed out that one of the most pressing unsolved problems in connection with poliomyelitis is the exact mode of transmission of the infection. "This problem must for the present remain unanswered, since the suspected healthy carrier and the unrecognized mild case constitute a combination which defeats the ends of anything short of absolute quarantine of entire families. Furthermore, the possibility of food and milk-born infection, added to the well-established fact of direct transmission from person to person, renders successful epidemic control of the disease practically impossible."

The physicians of Illinois are indebted to the State Department of Public Health for making convalescent serum available. The maintenance and the distribution of the supply of serum is expensive, and therefore, one should not waste it, but should attempt to use it intelligently. When one is in doubt whether the serum is indicated, or if it is not available, the majority of observers are agreed that one is justified in the use of serum or whole blood from normal adults. It seems to me that, until more satisfactory methods of diagnosis, immunization and treatment are devised, that such therapy is more than justified, that it is clearly indicated. What would we do, if it were your child, or my child? Our patients should receive that same consideration.

The question whether serum should be introduced intrathecally is still open. If "the changes in the cerebrospinal fluid indicate that the choroid plexus barrier has already been broken down, it seems likely that the virucidal serum will reach the parenchyma of the spinal cord with sufficient rapidity and concentration without subjecting the patient to the possible dangers of the meningeal cellular response which usually follows the introduction of serum by the lumbar route, the so-called aseptic meningitis."[4] The intravenous route is considered by many to permit a sufficiently rapid effect. Intravenous therapy in small children, however, is difficult and is not without danger. Should one desire to inject larger quantities, the intraperitoneal route has its advantages. If given early, many observers believe that the intramuscular administration is as effective as any, and it is certainly the most practical one.

SUMMARY

Two cases of acute poliomyelitis, two of meningitis, and ten of suspected poliomyelitis are reported.

Convalescent serum or adult blood was used in 13 of the 14 cases.

A discussion of the pathology and spinal fluid findings in poliomyelitis, possible efficacy of convalescent serum and human blood, indications for their use, and the routes of administration.

REFERENCES

1. Draper, G.: Acute Poliomyelitis, Nelson Loose Leaf Medicine, P. 74, Vol. II.
2. Cantarow, A.: Anterior Poliomyelitis, International Clinics, p. 232, Vol. I. (March) 1932.
3. Draper, G.: Significant Problems in Acute Anterior Poliomyelitis, J. A. M. A. 97: 1139 (October) 1931.
4. McLean, S.: The Serum Treatment of Infantile Paralysis, Nelson Loose Leaf Medicine, p. 85, Vol. II.

Jefferson Building.

DISCUSSION

Dr. H. J. Shaughnessy, Springfield: When the Illinois Department of Public Health decided some year and a half ago to collect and distribute convalescent serum for the prevention and control of poliomyelitis we thought that this form of theraphy was on a pretty sound basis, judging by the results which had been obtained in Massachusetts, Canada, Detroit, California, and other places; but during the last poliomyelitis season—that is, late in the summer and fall of last year—reports began to filter in from Dr. W. H. Park and Dr. Kramer that the results were not as satisfactory as had previously been thought.

We decided therefore to send out questionnaires to the physicians who had used convalescent serum in Illinois to see what they thought about this form of treatment. Altogether we sent out sufficient serum from the department to treat approximately 250 cases. Almost the same amount was sent out from the Convalescent Serum Center in Chicago, which is a separate institution cooperating with the State Department of Health. In other words, serum was used in about three-quarters of the reported cases in Illinois.

Answers to the questionnaires were received from over 300 physicians, about 200 of whom had used serum and 100 had not. It was soon apparent that no accurate comparison could be made between the two groups.

The very first thing that we found was that the physician had been called in, on the average, a full day earlier in cases treated with serum than those not treated with serum. In other words, the reason that a good many cases had not been treated with serum was that paralysis had already been present before the physician was called, or he felt that the onset of paralysis was merely a question of time anyway; it was so late in the course of the disease.

At any rate, even disregarding this, it might interest you to know what was obtained in the treated series as compared with the untreated series. We found that no paralysis had ensued at any time in about 44 per cent. of the cases receiving convalescent serum, and

that only 12 per cent. in this group had paralysis of the severe type. Of the cases not receiving convalescent serum only 9 per cent. never showed paralysis and 22 per cent. showed paralysis of the severe type. The mortality rates in the two groups were almost identical.

In the serum-treated group, approximately 60 per cent. recovered without paralysis; and in the untreated group, 22 per cent. recovered without paralysis. In other words, judging from these figures the chances of recovery without any paralysis were about three times greater in the serum-treated group, remembering always the limitations on this comparison which I have brought out.

It seems from that and from a comparison of the types of cases which were treated, that serum treatment was of considerable value. We recognize that the good results in the treated cases were due to the factor which Dr. Barbour has already mentioned, the difficulty in making diagnosis, and the fact that a good many cases which were probably not poliomyelitis were included in the serum-treated cases. That that is not true to any great extent we think can be proved by a comparison of the symptoms in the two groups.

We find that the symptomatology in the treated and untreated groups was almost the same in per cent. and that lumbar punctures were made in about two-thirds of the cases where serum treatment was used. In other words, serum was not being administered merely on suspicion but after very careful study of the case; 53 per cent. of all the cases showed a positive spinal fluid at some time.

We feel therefore that in view of these results, and until it can be shown that convalescent serum is definitely harmful in its results, it is worth while to continue the collection of convalescent serum for distribution and use by the physicians in Illinois.

In that connection I should like to stress another thing which Dr. Barbour mentioned. After all, we are not making a scientific experiment in these studies. We are trying to prevent the after effects of poliomyelitis, and we cannot expect to do that if we wait to make an absolutely certain diagnosis, as Dr. Barbour has brought out.

Dr. F. G. Norbury, Jacksonville: It seems to me that Dr. Barbour's paper and Dr. Shaughnessy's discussion brought out two rather important points with respect to poliomyelitis in Illinois. Some of us have been interested especially in poliomyelitis for quite a few years, and some ten or eleven years ago, when we had an epidemic, demands for summarizing some of our findings and reporting some of the observations were made.

During this past epidemic in 1931 the fact that there was this rather widespread demand for serum, as Dr. Shaughnessy pointed out, has shown that physicians are thinking more of acute poliomyelitis in the pre-paralytic stage as the disease. This is an important thing from the standpoint of the clinician, from the standpoint of the care of the patient, and from the standpoint of certain effects so far as prevention of the complication of the disease—paralysis.

Ten years ago many of us did not make the diagnosis until the paralysis had appeared. It would be much the same as waiting to make the diagnosis of typhoid fever when perforation had occurred, or of diphtheria by post-diphtheritic paralysis. Now we have a rather definite clinical entity as brought out by Dr. Barbour in his delineation of the findings by which it appears that the diagnosis of the pre-paralytic stage can be made.

As I say, Dr. Shaughnessy's report shows that physicians over the state are making that diagnosis and are asking for serum for use in the treatment.

That there is also greater general recognition of the pre-paralytic stage as the disease itself is shown, I think, at the meeting of the American Medical Association in New Orleans last week. Those of you who were there had the privilege, as I did, of seeing that wonderful portion of the scientific exhibit by a special committee of the A. M. A. on poliomyelitis. We had the opportunity to hear Aycock, Kramer, Gordon, Shaw, —men whose work on poliomyelitis, both from the clinical and experimental standpoints, is standing up. We had the opportunity to see the charts, to see motion picture demonstrations. Then one whole afternoon of the Section on Pathology and Physiology was given over to a symposium on poliomyelitis.

The men whom I have mentioned, Dr. Park and others, gave the papers and gave to those who were there the report of their findings.

One of the interesting things to me in that discussion —and I believe that it might be supplementary to Dr. Barbour's report—was that the studies in experimental poliomyelitis, in which our own Dr. Shaughnessy in Illinois has participated and to which he has contributed much—have shown that the early lesions are direct lesions of the anterior horn cell. Most of us who have had the opportunity to see autopsy findings have seen the perivascular cuffing, have seen the changes that have been generally described; but the fact that, by the experimental study of the disease in monkeys, the early changes in the nerve cells themselves can be demonstrated is, I believe, an important thing in forwarding knowledge of the mechanism of the infection in the course of the disease.

As to methods of treatment or methods of introduction of the serum, that, I believe, is less important than the fact of early use of the serum. Dr. Barbour, through his pediatric experience, is familiar with the introduction of serum and solutions intraperitoneally. Some of us who are interested in neurologic conditions are perhaps more accustomed to using intraspinous medication.

The fact that Shaw and the other workers in California in their series used intramuscular injection and secured quite satisfactory results shows that the method there is adequate and that it is not necessary to wait for the utilization of some of these special procedures.

In regard to the possibility of the development of an aseptic meningitis that Dr. Barbour mentioned, Shaw has said in the pamphlet that was produced and prepared for the exhibit that this aseptic meningitis may or may not be a disadvantage. In our own experience

in using sera intraspinously, in practically every instance combined, as a rule, with intramuscular administration, we have not had any difficulties that we thought were unfavorable reactions from intraspinous therapy.

This conclusion, I think, might be stated on the basis of the study of the literature, and also I would say from personal experience, that Dr. Barbour had diagnosed poliomyelitis in many of these cases that he had called suspected poliomyelitis, that his prompt use of the various therapeutic measures had given relief. This also may be added: that when paralysis has appeared then there is not much use to give sera unless the temperature is still elevated or new paralyses or new evidences of weakness indicating that the disease is still active are shown to be present. Thank you for the opportunity of discussing this.

Dr. E. S. Gillespie, Peoria: I want to say a few words to emphasize what Dr. Barbour has said about the difficulty of diagnosis. I know at least half of these cases, this series of 20 that he has—I think possibly more than that—and we saw some of them early. They were practically all hospitalized, and we had all the facilities at our command to make the diagnosis, and yet we were not able to be sure. In every case, however, where they were treated we guessed that they were anterior poliomyelitis cases and treated, as he said, with the results that he gave.

There were just three cases in Peoria during this last epidemic about which I want to speak and which will emphasize the difficulty of diagnosis.

The first case that we had in Peoria last July was an adult female 43 years of age. The diagnosis was never made until Dr. Bohrod, I think, did it from the autopsy. It was the bulbar type, and the most virulent type, and she died without the diagnosis having been made, on the forth day after onset.

About a week later there was another adult female 27 years of age who had all this chain of symptoms that Dr. Barbour has told you about, and she collapsed in the backyard. We got her into the house, and she had all those coarse tremors and her respiratory apparatus was in very bad condition. Her respirations were about 5 to 5-½ to the minute and she looked as though she might die any time. 20 cc.'s of convalescent serum were given intravenously. That was about nine o'clock in the morning and it was repeated again at nine o'clock in the evening. The woman recovered without any paralysis and made an uneventful recovery.

There was another case and it happened to come to the St. Francis Hospital the day that Dr. Houston was there to get blood to make convalescent serum. I saw the case, and Dr. Houston and two other doctors in Peoria saw the case, and we all agreed that it was poliomyelitis. The convalescent serum was given, I think three doses; the child went right ahead and died. That case went to autopsy, and I think that Dr. Bohrod did that one too.

The findings at autopsy were a purulent pericarditis, a psoas abscess, and several other things. With all the things that we had to work on we all felt that we were justified in pronouncing this a case of anterior poliomyelitis, and yet we were a thousand miles from being right. Those are the mistakes that can be made. This child had a temperature of 104, was unconscious, and in very bad condition Those three cases happened in Peoria within about a month and a half.

I do feel that if we are ever going to do any thing for these cases we must give the treatment without waiting for a positive diagnosis.

THE LENS-ANTIGEN EXTRACT TREATMENT OF CATARACT

The experience of Dr. A. E. Davis, of New York City, in the use of anti-lens serum and lens-antigen extract in the treatment of cataract now extends over ten years. In *Am. Med.*, Jan., 1932, he reviews the whole subject and reaches the following conclusions:

1.—*Subcapsular senile* cataract is the most favorable type for the treatment; in the very early stages (incipient), 80 to 85 per cent. (81.47 percent. in this series of cases) can be improved or arrested and retarded in their progress, the lens opacities being reduced and the vision improved. Even in immature cases the percentage is 55.31 per cent.

2.—*Cortical, including posterior cortical* types are the next best suited for the treatment and, in the incipient cases, about 75 per cent. can be improved or arrested.

3.—*Nuclear, Sclerosing* (black) and capsular cataracts are not influenced by the treatment, and in such cases it should not be given.

4.—In all types with vision less than 20/70, except in very old and feeble patients in whom an operation is not feasible, the remedy should not be given.

5.—*Early diagnosis and early active treatment* are of paramount importance in stopping the progress of cataract formation.

6.—All presbyopes, when coming for their first glasses, should be examined carefully for lenticular opacities (cataract), in order that early active treatment may be instituted.

7.—The percentage of cases improved and arrested by the lens-anigen is much greater than that obtained by a careful refraction and simple hygenic treatment.

8.—Since it is possible, in the early cases, to stop the progress of cataract, the people generally should be as acquainted with the fact as they are now with the necessity for early treatment of cancer and tuberculosis and diabetes. Early diagnosis and active treatment in cataract is of just as much importance as in the above dreadful diseases.

9.—In this day of *preventive medicine*, patients with cataract should at least be given a chance to retain useful vision and not allowed to drift along, as is usually done now, until the sight is lost, and an operation, not always successful, has to be performed.

Housewife (to garbage man)—Am I too late for the garbage?

G. M.—No ma'am; jump right in.—*N. U. Purple Parrott.*

Society Proceedings

BOND COUNTY

At the meeting, December 16, at Greenville, Doctors from Highland, Vandalia, Ramsey and St. Elmo were present. Dr. Neil S. Moore of St. Louis gave a lantern slide lecture on "Obstruction at the Neck of the Bladder" and the technic and instruments for its treatment. Dr. W. C. Gaylor, also of St. Louis, gave a paper on "Indications for Cesarean Section." The Society extended a vote of thanks to both distinguished Doctors.

The society elected the following officers for 1933: D. T. Brown, president; K. B. Luzader, vice-president; W. T. Easley, secretary-treasurer; Drs. L. J. Cordonier, R. Wilkus and W. L. Hall, delegates to State Society, and K. B. Luzader, alternate to Dr. Hall. One new member was admitted to membership.

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, December 7, 1932

PUBLIC HEALTH

Health Education Through the Press
Mr. Robert M. Lee, City Editor, Chicago Tribune.
Health Education Over the Radio
Dr. W. S. Bauer, Director, Bureau of Health and Public Instruction, American Medical Association.
Health and Life
Dr. Louis Mann, Chicago Sinai Congregation.

Regular Meeting, Wednesday, December 14, 1932

GENERAL PRACTITIONER'S NIGHT

Symposium on Pediatrics

Causes of Obscure Fever in Infancy and Childhood ..... Charles Schott
Causes of Pus in the Urine in Infancy and Childhood ..... John A. Bigler
The Present Status of Serum Therapy in Pediatrics ..... Julius H. Hess

Discussion: George E. Baxter, Robert A. Black, Isaac Abt, Joseph Brennemann, Clifford Grulee

GREENE COUNTY

The regular quarterly meeting was held in Roodhouse, December 9, 1932.

After a nice chicken dinner in Oak Cafe the meeting was called to order at 7:00 P. M. in the dining room by the president, Dr. A. R. Jarman. At the suggestion of the secretary the business session was postponed until after the scientific session. Dr. A. R. Jarman read a very systematic and thorough paper on "Digitalis." Its origin, effects, indications, precautions necessary in its use and other valuable points were treated of by the writer. The discussion was general and showed that all the physicians present were interested in this valuable drug.

Miss Ware of the State Department of Public Welfare gave an instructive talk on the manner of putting on a campaign for diphtheria immunization, which can also be followed in campaigns for typhoid and smallpox prevention as well.

Routine business was disposed of and the following officers were elected for the year of 1933: president, Dr. O. J. Gause of White Hall; vice president, Dr. E. E. Jouett of Carrollton; secretary-treasurer, Dr. W. H. Garrison of White Hall; censor, Dr. O. L. Edwards of Roodhouse.

Dr. L. E. Demke of Eldred was elected to membership. Ten members and visitors were present. Next meeting in Carrollton, March 9, 1933.

—W. A. Garrison, Sec'y.

McLEAN COUNTY

At the meeting, December 13, in Bloomington Dr. J. C. McNutt was elected president for the year beginning June 1, 1933. Dr. James Jensen of Saybrook was named vice-president and Dr. Ralph P. Peairs, Normal, was re-elected secretary-treasurer.

Dr. M. F. Engman, professor of dermatology at Washington university, St. Louis, spoke at the Illinois hotel, following a clinic which he conducted at Brokaw hospital from 4 to 6 p. m. Tuesday on the subject of dermatology. Dr. H. W. Grote, president of the society, arranged and managed the clinic. Mrs. Engman was entertained Tuesday night at a buffet supper at the home of Dr. and Mrs. H. L. Howell, 410 East Front street, by the women's auxiliary of the medical society. Mrs. Gerald M. Cline is president of the auxiliary and Mrs. Grote, secretary.

The medical society went on record as in favor of its members following the practice of former years in caring for indigent persons in need of medical aid. A number of indigent cases are cared for annually, it was said.

TRAINING PERIOD FOR MEDICAL DEPARTMENT RESERVE OFFICERS OF ARMY AND NAVY

From February 12 to 25, 1933, there will be a training period for Medical Department Reserve Officers of the Army and Navy, made possible at the University of Washington Medical School, St. Louis, Missouri, by the courtesy and enthusiasm of the faculty of this school in cooperation with the Medical Departments of the Army and Navy.

While this is classed as an "inactive duty period" and is without pay or allowances to the participants, the time spent is recognized for the same credits as though it were an "active duty" period. The exceptional clinical advantages of this great medical center, combined with the advanced military and naval training, make possible a very profitable two weeks. The training is open to all Medical Depart-

ment Officers of the Army and Navy reserves, or the National Guard.

The program of the clinics will be under the direct supervision of the faculty of the Washington University. The military instruction, which for the first time includes instruction with reference to the medical service of the Navy, will be under the direct supervision of Colonel George A. Skinner, Medical Corps, United States Army, Corps Area Surgeon, assisted by Lieutenant Commander Reuben H. Hunt, Medical Corps, United States Navy.

Applications for attendance should be forwarded to the Surgeon, Seventh Corps Area, Baird Building, Omaha, Nebraska.

Marriages

CLYDE F. BACCUS to Miss Helen Louise Miller, both of Woodstock, Ill., October 25.

WILLIAM J. BLACKARD, JR., to Miss Irene Travis, both of Harrisburg, Ill., in Louisville, Ky., November 19.

HENRY I. CHAPMAN to Miss Sylvia Eppenstein, both of Chicago, November 10.

JOEL A. PETERSON, Urbana, Ill., to Miss Genevieve Nelson of Red Wing, Minn., in Decatur, Ill., October 15.

WALTER J. SIEMSEN, Chicago, to Miss Helen Hekman of Grand Rapids, Mich., October 29.

Personals

Dr. C. R. Wegner of St. Louis addressed the Monroe County Medical Society on "Toxemias of Pregnancy" Nov. 17.

Dr. Frank Buckmaster, Effingham, was elected president of the Central Illinois Medical Society at its fifty-seventh semiannual meeting in Pana, November 29.

Dr. Ralph T. Hinton, managing officer of the Manteno State Hospital, observed his twenty-fifth anniversary with the state department of welfare, November 22.

Dr. Bernard Fantus, Chicago, addressed the Kankakee Medical Society and the Kankakee State Hospital staff, December 1, on "Therapy of Colon Stasis."

Dr. Frank J. Jirka has been appointed medical superintendent of the House of Correction, succeeding Dr. Charles E. Sceleth, who retired after thirty-three years' service.

Dr. Chauncey C. Maher has been appointed assistant professor of medicine at Northwestern University Medical School.

Dr. Gerry B. Dudley, Charleston, was elected president of the Wabash Valley Aesculapian Society, succeeding Dr. Otto R. Spigler, Terre Haute, Ind., at its annual meeting in Paris, November 2.

Dr. Clarence O. Sappington has resigned as director of industrial health of the National Safety Council, and will engage in private practice as a consultant in industrial hygiene.

Dr. John S. Sweeney has resigned as house physician at the Palmer House after thirty years' service, on account of ill health. Dr. Edward F. Addenbrooke succeeds him.

Edwin O. Jordan, Ph.D., addressed the seventeenth annual meeting of the Institute of Medicine of Chicago, December 6, on some problems in epidemiology.

Dr. Evarts A. Graham, St. Louis, delivered the E. R. DeBoth Lecture in Surgery, December 16, at Rush Medical College, on "The Story of the Development of Cholecystography."

Dr. Charles Marshall Davison, Chicago, addressed the Will-Grundy County Medical Society, November 23, on "Recurrent Cholecystitis Following Cholecystotomy."

The "silver beaver" award of the Boy Scouts of America was recently conferred on Dr. Warren E. Taylor, Moline. The award is made each year to the man in the Moline area who has shown "distinguished service to boyhood," the report stated.

Dr. Thomas McCrae, Philadelphia, addressed a joint meeting of the Society of Medical History of Chicago and Northwestern University, December 1, on "Osler: Teacher and Physician."

"All you need to get back to the farm," says a writer, "is backbone"—and some liniment to rub on it.—*Palatka (Fla.) News.*

Tommy (to Aviator): "What is the most deadly poison known?"

Aviator: "Aviation poison."

Tommy: "How much does it take to kill a person?"

Aviator: "One drop."

—*The High Twelvian.*

News Notes

The Chicago Gynecological Society was addressed, December 16, by Drs. Lloyd L. Arnold on "Relation of Season and Constitutional Type to Menstruation" and William F. Petersen, "Biochemical Alterations and Their Relation to the Menstrual Cycle."

Among the speakers before the North Central Illinois Medical Society in Pontiac, December 6, were Drs. Emil Z. Levitin, Peoria, on "Post-encephalitic Respiratory Syndromes," and Andy Hall, Springfield, state health officer, "Venereal Diseases as a Public Health Problem."

The Chicago Society of Internal Medicine was addressed, December 19, by Drs. Robert E. Johannesen on "Parathyroid Tetany," and James B. Graeser, Chicago, and Ching Wu, Peiping, China, "A Comparison of Physical Findings and X-Ray Signs of Lobar Pneumonia."

Officers of the Institute of Medicine of Chicago, recently elected for the ensuing year, include Drs. Ludvig Hektoen, chairman of the board of governors; Isaac A. Abt, president; Basil C. H. Harvey, vice president; George H. Coleman, secretary, and John Favill, treasurer.

Speakers before the Stephenson County Medical Society, Freeport, November 30, included Drs. Albert H. Montgomery, on "Surgery of Acute Abdominal Conditions in Children"; Frederick H. Falls. "Unusual Complications in Pregnancy," and Charles A. Elliott, "Management of Hepatic Disease." The speakers were from Chicago.

At a joint meeting of the Chicago Dermatological Society and the Society of Medical History of Chicago, December 16, Dr. John E. Lane, New Haven, Conn., spoke on "Jean Deveze, Stephen Girard, Benjamin Rush and the Yellow Fever Epidemic in Philadelphia in 1793," and Dr. William Allen Pusey, "Noah Worcester: Pioneer Internist and Dermatologist in the Middle West."

The Bureau County Medical Society, Princeton, celebrated its fortieth anniversary, November 7, with an orthopedic clinic and scientific program. Dr. Hugh E. Cooper, Peoria, conducted the clinic, and Drs. James H. Hutton and Nelson M. Percy, Chicago, spoke on "Thyroid and Ovarian Disturbances at Puberty and the Menopause" and "Goiter," respectively.

A room especially designed to save eyesight will soon be established in a public school as a gift from the Chicago Woman's Aid in honor of its fiftieth anniversary. According to the Chicago *Tribune*, the room, which is to accommodate about forty children, will be specially lighted and decorated, and special typewriters and other equipment will be supplied. Children's eyes will be tested and fitted with glasses by a physician.

According to the State Department of Health, until November 1 the number of cases and deaths reported for influenza were below the totals for the same period in 1931. However, during November, fifty-five cases with twenty-two deaths were recorded, as compared with thirty-three cases and thirteen deaths for 1931. For the week ended December 9, seventy-five cases were reported, as compared with eleven for the corresponding period of 1931. Nineteen deaths were noted, as against four of the period in 1931.

The Decatur Medical Society observed the completion of fifty years in the practice of medicine of Dr. Frank M. Anderson at its meeting, December 2. The guest of honor was presented with a gift of flowers, following a review of his career by Dr. Wilbur Wood. Dr. Anderson, who has practiced in Decatur thirty-three years, was president of the society in 1921. Officers elected at this meeting are Drs. Ansel O. Magill, president; Herbert E. Parsons, vice president, and Dwight A. Pence, secretary. They will assume office in January.

Dr. Edgar C. Cook was elected president of the North Central Illinois Association at the 59th annual meeting at Pontiac. Dr. Cook succeeds Dr. Arthur Springer of Peoria. The other officers elected were: Dr. H. A. Millard, Minonk, first vice president; Dr. Peter H. Peppen, Princeton, second vice president; Dr. George A. Dicus, Streator, secretary-treasurer. Dr. Cook served as vice president of the organization last year.

Thirteen private hospitals in Chicago made available, December 12, 400 free beds for those of the sick poor denied admission to the overcrowded Cook County Hospital. The cost of hospitalization for these persons, which is not to exceed $3.75 a day, will be borne by the Emergency Welfare Fund of Cook County.

Applicants will be received on recommendation of the county department of public welfare or any recognized social agency, the Chicago *Tribune* reported. The institutions which offered beds are Augustana, Grant, Chicago Lying-In, Lutheran Deaconess, Michael Reese, Mount Sinai, Passavant, Presbyterian, Provident, St. Elizabeth's, St. Luke's, St. Mary of Nazareth and the Women's and Children's hospitals. The movement to provide beds in private institutions was begun to relieve the over-crowded condition of the county hospital, which is caring for about 2,900 patients, whereas its normal capacity is 2,500. Free hospitalization will greatly increase the expenditures of health service of the emergency welfare fund, it was stated, which, at present, has $1,100,000 set aside for this purpose.

The American Association for the Study of Goiter, for the fourth time, offers Three Hundred Dollars ($300.00) as a first award, and two honorable mentions for the best three essays based upon original research work on any phase of goiter presented at their annual meeting in Memphis, Tenn., May 15th, 16th, and 17th, 1933. It is hoped this will stimulate valuable research work, especially in regard to the basic cause of goiter.

Competing manuscripts must be in English and submitted to the Corresponding Secretary, J. R. Yung, M.D., 670 Cherry St., Terre Haute, Indiana, U. S. A., not later than April 1, 1933. Manuscripts arriving after this date will be held for the next year or returned at the author's request.

HOW TO KILL A MEDICAL SOCIETY

Don't come to the meetings. If you do come, come late. If the weather doesn't suit you, don't think of coming. If you do attend a meeting, find fault with the work of the officers and other members. Never accept office, as it is easier to criticize than to do things. Nevertheless, get sore if you are not appointed to a committee; but if you are, do not attend the committee meetings.

If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say. After the meeting, tell everyone how things ought to be done. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly and unselfishly use their ability to help matters along, howl that the organization is being run by a clique. Hold back your dues as long as possible, or don't pay them at all. Don't bother about getting new members.—*The Aesculapian.*

Deaths

BENJAMIN ABNER ARNOLD, Freeport, Ill.; Rush Medical College, Chicago, 1895; a Fellow, A.M.A.: past president of the Stephenson County Medical Society; on the staffs of St. Francis and the Evangelical Deaconess hospitals; aged 70; died, November 24, of diabetes mellitus.

CHARLES JOHN BESTA, Chicago; University of Illinois College of Medicine, 1926; physician at Bridewell hospital; aged 36; died, December 24, of cerebral hemorrhage.

JOHN MICHAEL BOHAN, Galesburg, Ill.; Northwestern University Medical School, Chicago, 1907; a Fellow, A.M.A.; on the staffs of the Galesburg Cottage Hospital and St. Mary's Hospital; aged 51; died suddenly, December 9, of coronary thrombosis.

ELMER E. BURTON, Jacksonville, Ill.; Eclectic Medical Institute, Cincinnati, 1891; member of the Illinois State Medical Society; on the staff of the Jacksonville State Hospital; aged 67; died, December 12, in St. Anthony's Hospital, Effingham.

WILLIS BUTTERFIELD, Belvidere, Ill.; Chicago Medical College, 1872; aged 84; died, October 23, of paralysis agitans and myocarditis.

ALFRED LESLIE CASBURN, Ferris, Ill.; University of Kansas School of Medicine, Kansas City, 1906; aged 49; died, November 25, of glomerular nephritis and hypertension.

JOHN WESLEY DAVIS, Hardin, Ill.; St. Louis College of Physicians and Surgeons, 1910; aged 59; died, August 8, in St. Mary's Hospital, St. Louis, of cerebral hemorrhage.

THOMAS JEFFERSON DUNN, Dieterich, Ill.; Rush Medical College, 1881; a member of Illinois State Medical Society; oldest practicing physician in Effingham county; aged 86; died, November 25.

WILLIAM ENGELBACH, Arenzville, Ill.; Northwestern University Medical School, Chicago, 1902; a Fellow, A.M.A.; member of the Medical Society of the State of New York; instructor in medicine, St. Louis University School of Medicine, 1906-1909, assistant professor, 1909-1911, and professor in medicine, 1911-1923; president of St. Louis Medical Society in 1918 and the Association for Study of Internal Secretions, 1922-1923; founder, and physician in chief of St. John's Hospital, St. Louis, 1909-1924; on the staffs of St. Louis City, Jewish and Maternity hospitals, and the Missouri Baptist Sanitarium; fellow of the American College of Physicians; served on the examining board for state of Missouri during the World War; author of "Endocrine Medicine," and other publications pertaining to endocrinology; aged 55; died, November 22, in St. John's Hospital, Springfield, Ill., of heart disease.

MARY E. GREGG, Chicago; Hahnemann Medical College and Hospital, Chicago, 1891; a medical missionary in Guatemala for ten years; aged 74; died, December 25, in Presbyterian hospital, from injuries received in a fall.

CHRISTIAN FREDERICK GRIMMER, Pekin, Ill., University of Michigan Medical School, 1901; a Fellow, A.M.A.; aged 61; died, December 9, of pneumonia.

LUTHER S. HALL, Oregon, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; aged 82; died, December 16, of arteriosclerosis and myocarditis.

JOSEPH HALLETT, Bloomington, Ill.; Hahnemann Medical College and Hospital, 1878; a veteran of the Civil War; aged 89; died, November 13.

JOHN LAWRENCE JACQUES, Chicago; Rush Medical College, Chicago, 1896; formerly assistant professor of medicine at his alma mater; aged 61; died, November 14, of myocarditis and coronary thrombosis.

WILLIAM CLAY JONES, Chicago; Eclectic Medical Institute, Cincinnati; 1909; aged 48; died, October 30, in the Woodlawn Hospital, of cyanide poisoning, self-administered.

JOSEPH LEE KERRELL, Alton, Ill.; American Medical College, St. Louis, 1889; aged 76; died, November 2, of heart disease.

CHARLES P. KINNEY, Crossville, Ill.; Cincinnati College of Medicine and Surgery, 1877; a pioneer resident of White county; aged 87; died, December 4, of chronic myocarditis.

HANSON JULIUS KOFOED, Chicago; Jenner Medical College, 1913; a former member of the Illinois State Board of Health and on the staff of Chicago State hospital and Elgin State hospital; aged 60; died, November 26, of chronic myocarditis.

FRANK M. MASON, Danville, Ill.; Northwestern University Medical School, 1894; a Fellow A.M.A. and Fellow, American College of Surgeons; a member Tri-State Medical Society and the Aesculapian Medical Society of the Wabash Valley; surgeon of staffs of the Lakeview and St. Elizabeth's hospitals of Danville; aged 66; died, in Passavant Memorial hospital, December 24, of carcinoma of the pancreas.

CHARLES OTTO MOLZ, Quincy, Ill.; Missouri Medical College, St. Louis, 1898; a Fellow, A.M.A.; fellow of the American College of Surgeons; aged 60; on the staff of St. Mary's Hospital, where he died, November 3, of agranulocytic angina, edema of the glottis and dilatation of the heart.

MILTON GUY OWEN, Springfield, Ill.; Hahnemann Medical College and Hospital, Chicago, 1894; a Fellow, A.M.A.; past president of the Sangamon County Medical Society; formerly member and president of the board of education; aged 60; on the staff of St. John's Hospital, where he died, November 12, of sepsis.

JOHN A. PLUMER, Trivoli, Ill.; college of Physicians and Surgeons, Keokuk, 1889; a Fellow, A.M.A.; aged 64; died, November 27.

CHARLES C. RANSOM, Potomac, Ill.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 72; died, November 24.

PAUL RUDORF, Hinsdale, Ill.; Hahnemann Medical College and Hospital, Chicago, 1885; aged, 71; died, December 3.

KARL DAVID SANDERS, Jonesboro, Ill.; Ensworth Medical College, St. Joseph, 1908; veteran of the Spanish-American War; aged 52; died, November 4, in the Veterans' Administration Hospital, North Chicago, of arteriosclerosis.

EDWARD ALLEN SICKELS, Dixon, Ill.; Hahnemann Medical College and Hospital, Chicago, 1897; a Fellow, A.M.A.; fellow of the American College of Surgeons; on the staff of the Dixon Public Hospital; aged 66; died, November 13, of carcinoma.

JOHN HENRY SPENCER, Jacksonville, Ill.; National University of Arts and Science, St. Louis, county physician and health officer; a veteran of the Spanish-American and World Wars; aged 65; died, December 4, of heart disease.

HENRY ALBERT STAIB, Chicago; University of Illinois College of Medicine, Chicago, 1915; member of the Illinois State Medical Society; aged 40; was instantly killed, November 9, in an automobile accident.

THOMAS JOHN SULLIVAN, Chicago; University of Michigan, 1880; assistant professor of surgery in his Alma Mater several years; chief of staff, St. Bernard's Hospital, 1904-1912; major and surgeon of 7th regiment, Illinois National Guard, 1896-1916; a Fellow, American College of Surgeons; aged 76; died, December 17, of influenza and bronchopneumonia.

HUBERT J. STRATEN, Chicago; Hering Medical College, Chicago, 1894; a Fellow, A.M.A.; Dunham Medical College, Chicago, 1895; aged 64; died, December 8, of heart disease.

JOHN AARON TAYLOR, Gridley, Ill.; Bellevue Hospital Medical College, New York, 1875; aged 82; died, November 1.

AUGUST G. WILHELMJ, Maeystown, Ill.; Marion-Sims College of Medicine, St. Louis, 1895; aged 61; died, October 28, of cerebral hemorrhage.

SIMON WILLARD, Cobden, Ill.; Chicago Medical College, 1884; aged 73; died, October 24, of uremia and chronic cystitis with hypertrophy of the prostate.

JAMES X. WILLITS, Chicago; Chicago College of Medicine and Surgery, 1916; aged 68; died, October 28, of pneumonia.

FRANK G. ZILLIKEN, Chester, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1896; aged 58; was found dead, November 4, of heart disease.

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